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ABSTRACT

This publication is designed to help service providers deliver high-quality workplace development services cost effectively to small and medium-sized businesses. The guide looks at five service delivery strategies: learning consortia, walk-in centers, distance learning, computer-based training, and trained volunteers. These five strategies offer a number of insights into how providers can both reduce costs and compensate for the negative side-effects that may be associated with cost reduction. The guide includes the following: (1) a discussion of each of the five delivery strategies and how they are being implemented; (2) five detailed case studies of exemplary programs delivering high-value services at relatively lower costs; and (3) 26 one-page summaries of programs following one or more of the five delivery strategies, along with relevant contact information for each program. The programs profiled are conducted throughout the country. Appendices list additional programs and organizations, advisory groups of the National Workforce Assistance Collaborative, and products and services of the collaborative. (KC)

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Delivering Cost Effective Services to Small and Mid-Sized Companies

A GUIDE FOR WORKFORCE AND WORKPLACE DEVELOPMENT PROVIDERS

NATIONAL ALLIANCE OF BUSINESS

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*The **National Workforce Assistance Collaborative** builds the capacity of the service providers working with small and mid-sized companies in order to help businesses adopt high-performance work practices, become more competitive, and ultimately advance the well-being of their employees. The Collaborative was created with a $650,000 cooperative agreement grant from the **Department of Labor** to the **National Alliance of Business.** Current partners on the project include the Council for Adult and Experiential Learning, the Institute for the Study of Adult Literacy at The Pennsylvania State University, the Maryland Center for Quality and Productivity, and the National Labor-Management Association. The Collaborative provides assistance in four areas: employee training, labor-management relations, work restructuring, and workplace literacy. For more information, contact the National Alliance of Business, phone: 800/787-2848, fax: 202/289-1303, e-mail: NWAC@NAB.COM.*

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NATIONAL WORKFORCE ASSISTANCE COLLABORATIVE

Delivering Cost Effective Services to Small and Mid-Sized Companies

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By Terri Bergman
and
Scott Cheney

November 1996

NATIONAL
ALLIANCE OF
BUSINESS

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Introduction

Service providers have always found it difficult to deliver assistance to small and mid-sized companies. There are just too few people needing services in these smaller companies to share in the costs of development and delivery. Most providers see themselves facing a choice between giving companies the services they need, but at prices they cannot afford, or giving them lower-quality services at affordable prices. This dilemma is true whether a provider is offering training, management consulting, or technology assistance.

This publication is designed to help service providers find a point in between the two extremes, where they can deliver high-quality services cost effectively. While it may be impossible to eliminate the tradeoff between quality and affordability entirely, it is certainly possible to move to a point where services are *more* appropriate, and costs are *reasonably* manageable.

This publication looks at five service delivery strategies:

- Learning consortia,
- Walk-in centers,
- Distance learning,
- Computer-based training, and
- Trained volunteers.

Properly implemented, all of these can reduce the cost of services to companies. With some creativity, they can also provide companies with the valuable services they need. While there may be other ways to deliver high-quality services cost effectively, these five strategies offer a number of insights into how providers can both reduce costs and compensate for the negative side-effects that may be associated with cost reduction.

Services Covered by this Publication Include

- Workplace literacy training
- Technical training
- Work restructuring assistance
- Labor-management relations assistance
- Management consulting
- Technology assistance

This Publication Is for

- Community colleges
- Universities
- Manufacturing technology centers
- State literacy and training programs
- State economic development and technology offices
- Labor-management associations
- Business organizations
- Trade and professional associations
- Business development centers
- Private industry councils
- Non-profit organizations
- Private consulting firms

Any service provider working with small and mid-sized companies should find this publication useful, including educational institutions, government programs, business and labor associations, and private organizations. With small and mid-sized businesses responsible for the bulk of America's employment and employment growth today, it is essential that all providers – trainers and consultants – find ways to help these smaller companies remain competitive.

Cost Effective Strategies

Both the words "cost" and "effective" are important components of the term "cost effective." It is easy to cut costs by lowering the quality of services; what takes skill is reducing costs while maintaining the *effectiveness* of services. Cost effectiveness cannot be measured by a straight compari-

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son of prices, it must be measured by comparing prices *per unit value*, e.g., prices for an amount of knowledge gained, skills acquired, productivity increased, quality improved, profit raised – whatever metric is relevant for the service being provided.

Service Costs

The cost of services is made up of a number of components. For the providers, it includes:

- Time, materials, and capital costs (rooms, equipment) required for developing the services,
- Time, materials, and capital costs required for delivering the services, and
- Time and cost required for traveling to where the services are delivered.

Companies receiving the services would cover *all* of these costs in the fees they paid the providers, *plus* they would incur additional costs:

- Time, materials, and capital costs involved in participating in the services, including participation in developing, promoting, scheduling, tracking, and attending,
- Time and cost required for traveling to where the services are delivered, and
- Salaries for replacement workers or lost productivity for time when employees are off the job participating in or traveling to the services.

Therefore, reducing the cost of services to companies involves reducing one or more of these components – the cost components for providers *and* the cost components for companies. Providers can accomplish this in a variety of ways:

1. Delivering the same services to a number of companies so that the companies effectively split the provider's *development* costs.
2. Delivering services to multiple companies at the same time so that the companies share the provider's *delivery* costs.
3. Having the provider deliver services from one location convenient to it, and the company(ies) receive the services in a different location convenient to it (them), in order to reduce *travel* costs for all involved.
4. Subsidizing the cost of services with government payments, outside grants, or contributions (cash or in-kind).
5. Making the services more efficient so that the provider's *development* and *delivery* costs and companies' *participation* costs are reduced.
6. Making the services more productive so that the provider's *delivery* time and companies' *participation* time is reduced.

Service Effectiveness

The most effective services are those targeted to the specific needs of individual companies and their employees. Effective services also supply opportunities for those receiving the services to interact with the provider, participate actively in exercises, and practice what they are learning both during service delivery and when they are back on the job. Additionally, effective services are delivered by highly-skilled individuals, and at the times the companies need them.

Most of the strategies for reducing costs listed above can have a negative impact on at least one of the characteristics of effective services.

1. Delivering the same services to a number of companies makes it difficult to target companies' or individuals' needs.
2. Delivering services to multiple companies at the same time compounds the problems discussed in item 1 above, by also reducing the provider's ability to promote practice back on the job, and making it nearly impos-

Effective Services

- Target companies' needs
- Target individuals' needs
- Promote provider-recipient interaction
- Encourage active participation
- Support practice back on the job
- Are conducted by skilled individuals
- Are delivered when they are needed

[redacted]

sible to provide services when each company needs them.

3. Having the provider deliver and company(ies) receive services in different sites tends to reduce interaction between the provider and recipient, limit active participation, and make it difficult for the provider to facilitate practice back on the job.
4. One method of subsidizing the cost of services – using volunteers – may involve employing less-skilled individuals as providers. Other methods might substitute the goals of the subsidizing organization for some of those of the recipients, thus making services less well targeted to company and individual needs.
5. Making services more *efficient* so that both the provider's and the companies' costs are reduced should not have a negative impact on effectiveness.
6. Making services more ***productive*** so that providers' delivery and companies' participation time is reduced also should not have a negative impact on effectiveness.

How providers can overcome, or at least ameliorate, these drawbacks is the focus of the rest of this publication. It includes:

- A discussion of each of the five delivery strategies – learning consortia, walk-in centers, distance learning, computer-based training, and trained volunteers – and how they are being implemented.
- Five detailed case studies of exemplary programs delivering high-value services at relatively lower costs.
- Twenty-six one-page summaries of programs following one or more of the five delivery strategies, along with relevant contact information on each.

Delivery Strategies

This publication highlights five service delivery strategies designed to reduce the cost of services:

- Learning consortia,
- Walk-in centers,
- Distance learning,
- Computer-based training, and
- Trained volunteers.

These five strategies were selected because experts in service delivery identified them as the *key* techniques used to serve small and mid-sized companies cost effectively. Each employs one or more of the cost-reduction methods identified in the Introduction. The chart below shows the cost-reduction methods that are *necessarily* a part of each service delivery strategy, though many providers have found ways to employ additional cost reduction methods in their programs.

None of these service delivery strategies is free. Many distance learning techniques and computer-based training programs require significant investments in technology and training, as well as up-front development time. Walk-in centers can require high capital investments and time for careful planning. Providers that want to work through learning consortia must first devote considerable time to forming and supporting the consortia. Even the use of volunteers, the least expensive of the service delivery strategies, requires an investment in training.

Providers must keep these costs in mind, and weigh the expenses associated with these strategies against their benefits, before selecting any particular service delivery strategy. This calculation will necessarily be different for every provider and in every situation.

The rest of this section looks at each of the five delivery strategies in turn. It defines them, and discusses how they are being implemented. It also discusses how they lower costs, the good and bad side effects of these cost-cutting measures, and what techniques can be employed to lessen the bad side effects.

Cost Reduction Methods Employed by Different Service Delivery Strategies

Service Delivery Strategies	Cost Reduction Methods					
	Serve Multiple Companies	Serve Multiple Companies at the Same Time	Have Provider and Companies in Different Locations	Subsidize Costs[1]	Make Services More Efficient	Make Services More Productive
Learning Consortia	●	●				
Walk-In Centers	●	●			●	
Distance Learning	●	●	●			
Computer-Based Training	●	●	●			●
Trained Volunteers				●		

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[1] While most of the examples in this publication use subsidies to reduce costs, only the use of trained volunteers requires subsidies *by definition* – using volunteers *subsidizes* salary expenses.

[redacted]

Learning Consortia

Cost Reduction Methods

- **Serving multiple companies**
- **Serving multiple companies at the same time**

In general, a learning consortium is a group of companies that come together to learn from each other in order to develop new capabilities, build the skills of their employees, and increase the productive capacities of their enterprises.[2] This learning can be targeted at the work*force* or the work*place*. A consortium's workforce development efforts concentrate on building the skills of the individuals in member companies (including management staff), while its workplace development efforts aim at improving the productivity and efficiency of the companies' workplace processes and strategies.

Most learning consortia engage in both *cooperative* learning and *collective* learning. In cooperative learning, members interact, share knowledge, and learn from each other; they work together to build their productivity and competitiveness. In collective learning, members learn together from some outside authority; they pool their resources to purchase this outside expertise.

Some consortia do not restrict their membership to companies, but also include other parties, such as labor, educational institutions, job training organizations, economic development agencies, or community organizations. However, even in learning consortia with broadened memberships, the cornerstone of the consortia remains making member companies more competitive.

Implementation

Learning consortia are "hot." When experts in service delivery were asked to suggest cost effective delivery strategies and to identify programs they considered to be exemplary models of these strategies, they identified more learning consortium examples than any other kind. Almost half of the program summaries at the end of this publication are learning consortia.

If learning consortia are hot, ISO 9000 learning consortia are hotter still. While the program summaries include only four ISO 9000 consortia, many more were identified and were only excluded from the publication in order to limit repetition.

The learning consortia identified for this publication were created around four distinct themes:

- Training,
- Quality practices,
- Labor-management relations, and of course
- ISO 9000.

The training-focused learning consortia that were identified address a variety of subjects, including basic skills, technical skills, quality practices, and employee empowerment. The **Consortium for Supplier Training**, one of the training-focused consortia, was created to prepare small supplier companies to follow the quality practices of their large-company customers. In Illinois, the **Industrial Training Program** supports the creation of consortia by providing training grants to *groups* of small and mid-sized companies that have identified common training needs. Under this program, community colleges and business and industry associations have sponsored training consortia, and original equipment manufacturers have sponsored supplier training networks.

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[2] For more information on learning consortia, see the National Workforce Assistance Collaborative's publication *Approaches to Forming a Learning Consortium: A Guide for Service Providers* (Washington, DC: National Alliance of Business, 1996).

The **Harford Quality Network**, the quality consortium identified for this publication, helps small and mid-sized companies adopt quality practices. The **Labor-Management Council for Economic Renewal**, the labor-management relations consortium identified for this publication, works with firms and union organizations to facilitate work restructuring and labor-management relations.

ISO 9000 consortia are created with a single, clear goal – getting member companies ISO-certified – and usually have specified start and end dates. It is the clear focus of these consortia and the well-defined participation requirements, along with the demand for ISO certification, that make these consortia so popular. Assistance even exists to prepare people to deliver ISO 9000 assistance. **EPiC**'s (Education Professionals in Consortium) ISO 9000 Training Program includes curricula, participant materials, facilitator training, and technical support providers can purchase and use to establish their own ISO 9000 training programs.

Typical consortium services include training sessions, where new ideas and techniques are brought to consortium members (usually as a group); networking opportunities, where member companies have the chance to learn from each other; and individualized consulting services, where experts work one-on-one with member companies to help them address their own specific problems.

In some consortia, service providers have functioned as conveners, pulling together the companies and helping them to define their purpose and coordinate their programs. In other consortia, the providers just deliver services to the companies, responding to the agenda the companies have set.

Cost-Cutting Techniques

Learning consortia are cost effective because the same services are provided to more than one company, usually at the same time. This spreads the costs of both development and delivery over a number of companies. Member companies may jointly contract for services, jointly develop services, or share their own existing services, usually training, with other members. Over time, they may build a library of resources all members can access.

Service providers that work with consortia are able to build an ongoing relationship with the participating companies. This relationship lowers the providers' overhead costs by making it easier for them to reach the companies and inform them about any new services they develop.

Frequently, the costs of a consortium's services are subsidized. A number of consortia have federal or state grants. The Labor-Management Council for Economic Renewal receives in-kind services from a labor union. The Consortium for Supplier Training, which is composed of large customer companies, developed training and prepared community colleges to deliver this training at its own expense – the recipient firms only have to cover the community colleges' costs of delivery to them. Many consortia use community colleges or other government-subsidized educational institutions to deliver services, further reducing the costs that must be borne by recipients.

Because **ETI**, a provider for ISO 9000 consortia, promises specific service providers that it will purchase a large amount of work from them, it is able to contract for the services at discount rates. The Labor-Management Council for Economic Renewal reduces contact hours – and costs – by focusing its services on members' "stated needs."

Benefits and Costs

There are a number of benefits from providing services through consortia beyond reducing costs. The process of working together as a group and learning cooperatively is extremely powerful. Members can share problems, solutions, and ideas with each other, thereby reducing the number of mistakes they make and shortening their learning curves.

Consortium members can expand their access to resources by sharing curricula, facilities, and service providers or trainers. By combining their resources, members might also be able to research and design new programs that they could not develop on their own. With the leverage members gain by being part of a group, they can persuade providers to tailor services to meet their needs. The Consortium for Supplier Training provides its small supplier companies with a world-class quality training program, one that is accepted by multiple large-company customers.

Many of the drawbacks associated with consortia stem from the fact that a great deal of the services provided are delivered to multiple companies at the same time. This makes it difficult to customize services to company needs, provide individualized attention, support recipients as they try to practice new techniques on the job, or deliver services precisely when they are needed by companies. In addition, some companies are uncomfortable participating in training or consulting sessions with their competitors, though this tends to be less of a problem than might be expected. Finally, and most importantly, the up-front costs associated with forming consortia can be very large, and the ongoing costs (time and money) of maintaining consortia can be challenging for both the providers and the companies.

Innovations

Consortia have adopted a number of techniques to counteract the drawbacks. Most consortia establish a balance between delivering services to a group of companies, and providing targeted consulting or technical assistance to individual companies. Many consortia conduct needs assessments of member companies before they begin providing services, and then help the member companies design and implement their own development plans.

The **Maryland Center for Quality and Productivity** convenes industry sub-groups where participants in its ISO 9000 consortia can cover ISO standards particular to them. Even with their more generic programs, shared with most of the member companies, consortium providers frequently look for opportunities to incorporate information and materials specific to each of the companies into their services.

Many consortium providers have found ways to vary their service delivery, in order to meet the learning styles of diverse participants. They employ group learning, one-on-one instruction, and self-led instruction. Some assess employees and create individualized workplans, tailored to each employee's needs.

Some consortium providers even vary their schedule of services in response to companies' schedules. A number of the ISO 9000 consortia noted that the companies controlled the pace of the services. By going beyond group classroom instruction, establishing drop-in service sites, and delivering services and technical assistance to companies at their work sites, providers are able to adjust the schedule of some of their programs to meet companies' timetables. Providing some services at the company sites has also enabled a few of them to help companies apply new techniques on the job.

Effective Services Characteristics

Key Advantages:
(Depends on provider's delivery strategy.)

Key Disadvantages:
(Depends on provider's delivery strategy.)

Keys to Success

- Provide individualized as well as group services.
- Assess companies' needs and help them create their own development plans.
- Assess employees' needs and create individualized workplans.
- Incorporate individual companies' materials into training exercises.
- Use a variety of instructional techniques to meet varied learning styles.

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Walk-In Centers

Cost Reduction Methods

- **Serving multiple companies**
- **Serving multiple companies at the same time**
- **Making services more efficient**

Walk-in centers are permanent facilities, open at established hours, where companies and individuals can come in for services, when they need assistance, and at their convenience. The centers are self-contained sites, where materials, equipment, and individuals are available and ready to meet client needs.

Walk-in centers may work with individual companies, and prepare to serve them, before the company employees come in for services. However, once that preparatory work is done, walk-in centers enable participants to receive services at the *participants'* convenience.

Implementation

Walk-in centers come in a variety of forms. The most comprehensive one identified for this publication is **Rancho Santiago Community College District's Business and Industry Services Center**. It provides an array of business assistance services at a single location, including a small business development center, business incubators, business ownership services, contract education, quality assurance training, and workplace learning.

The center's workplace learning program is probably the component that best exemplifies the "drop-in" nature of walk-in centers. Here the center uses a variety of instructional techniques – including computer-based training, audio-visual and audio tapes, and small group and individual instruction – to provide companies and their employees with customized literacy and basic skills services.

Both **Glendale Community College** and **GateWay Community College** operate large learning labs where individuals work through self-paced instructional modules on a variety of computer skills (e.g., word processing, spread sheets, data base management, graphics, computer assisted design). Instruction is provided through texts, and instructors are available at the centers to help students when they have questions.

Perhaps the most innovative walk-in center identified for this publication is **Kellogg Community College's Regional Manufacturing Technology Center**. This center provides individualized, self-paced, instructor-directed training in the industrial trades. Here students work through individual training modules on specific skills under the guidance of experienced journeymen.

Cost-Cutting Techniques

Walk-in centers can keep costs low by providing the same services to multiple clients, thus spreading the costs of development and delivery over a number of companies.

Costs can also be kept low through subsidies, which all of the centers highlighted in this publication receive. The Business and Industry Services Center receives government grants and operates some federally-funded programs. The Regional Manufacturing Technology Center was built and equipped with a combination of state, foundation, and corporate funding, and has received additional contributions from federal programs, the city, the community college, and corporations and vendors. All of the centers in the publication operate out of community colleges, which subsidize the costs of their services.

Some walk-in centers keep costs down by being more *efficient.* The Business and Industry Services Center is able to keep its costs down by bringing a number of related services together at one site where they can share resources and overhead costs. The Regional Manufacturing Technology Center is able to stock, and therefore purchase, fewer pieces of equipment because it does not have to train an entire classroom of individuals on the same machines at the same time. This center's most important cost-cutting technique, though, is tailoring instruction to companies' and individuals' needs: clients pay only for the specific skills required and mastered by employees.

Benefits and Costs

The greatest benefit of walk-in centers is their provision of "just-in-time" services. Clients get the assistance they need when they need it. Learning in these centers also tends to be active and hands-on, a boon for retention.

The greatest drawback of these programs is that they frequently provide prepackaged services, with no customization to either companies or individuals. In addition, clients generally receive no assistance in applying new skills or techniques on the job – service stops at the center door.

In a couple of areas, the benefit/cost analysis could cut either way. Clients *can* receive one-on-one instruction from providers, or they may shy away from asking for assistance and have little or no direct interaction with the provider. Clients *might* have access to highly skilled instructors in the fields they are studying (i.e., the experienced journeymen at the Regional Manufacturing Technology Center), or they may find the center staffed with instructors responsible for covering a variety of subjects, in which their level of expertise varies.

Innovations

Most of the drawbacks discussed above can be mitigated. Both the Business and Industry Services Center and the Regional Manufacturing Technology Center try to customize their services to companies' and individuals' needs. Prior to the start of any workplace learning program, the Business and Industry Services Center assesses the company's skill needs and collects documents that can be used to customize the curriculum. It also assesses the skill levels of each student and develops individualized learning plans for each one.

The Regional Manufacturing Technology Center works with companies to determine which skills are needed on the job *at their work sites.* It then assesses their employees and only has them work on the training modules required by both the company and the employee.

Glendale Community College works hard to keep up the skill levels of its instructors. Instruction on the courses and software packages are provided on a continuing basis, and customer service training is provided at the time of hire.

Effective Services Characteristics

Key Advantages:

- **Delivering services when they are needed.**

Key Disadvantages:

- **Not supporting practice back on the job.**

Keys to Success

- Assess companies and individuals, and target training to specific needs.
- Prepare on-site instructors to provide assistance on every topic covered in the center.

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Distance Learning

Cost Reduction Methods

- **Serving multiple companies**
- **Serving multiple companies at the same time**
- **Having the provider and companies in different locations**

The most all-encompassing definition of distance learning might be:

> *Training programs in which the instructor and students do not share the same physical space.*

Many other, less encompassing definitions of distance learning exist. The **United States Distance Learning Association** defines it as:

> *The delivery of education or training through electronically mediated instruction including satellite, video, audiographic computer, multimedia technology and learning at a distance.*

Mind Extension University defines it as:

> *The use of technology, including cable television, satellites, videotapes, telephones and computers to send educational content to students, wherever they are.*

The broadest definition would include educational techniques ranging from books, audiotapes, videotapes, computer-based training programs, correspondence courses, telecourses, and Internet courses to audioconferences, videoconferences, and docuconferences (people collaborating on shared documents via computers). The more narrow definitions would sort out techniques that were not electronically based or grounded in technology. Because direct interaction with an instructor is a feature of effective services, a more interesting breakdown might be based on *students' access to instructors.*

With *most* books, audiotapes, videotapes, and computer-based training, all of the instructor's knowledge is conveyed through the media. Students do not have the opportunity to ask questions or get detailed, personalized feedback on their work (though the products might include questions, followed by answers, the students can use to gauge whether they are mastering the material). Of course all of these media *can* be used as part of a class with an instructor who answers student questions and provides feedback, but in *general,* these products function as stand-alone education techniques.

Correspondence courses, telecourses, and Internet courses involve delayed communication between instructors and students. In most cases instructors provide information to students, students then work on their own, and finally the instructors provide feedback to the students on their work. With correspondence courses, instruction is usually provided via a product, such as a book, audiotape, or videotape. Telecourses involve broadcasts to television sets. For Internet courses, instructors use Internet e-mail to send information, assignments, practice exercises, and tests to students, possibly supplementing this instruction with books and tapes. These instructional techniques provide no opportunity for students to ask questions of the instructors *while they are instructing,* but they may provide forums for the students to ask questions later, perhaps by phone, fax, or over the Internet. For some of these education techniques, particularly a few of the Internet courses, the most valuable instruction occurs through feedback on student work.

Only audioconferences, videoconferences, and docuconferences offer instantaneous communication between instructors and students, though a limited number of students may be able to avail themselves of it during a single class period. This instantaneous communication may take place through two-way video and audio transmission, one-way video and two-way audio transmission, two-way audio transmission, or two-way computer access. It can also involve one-way video and audio transmission with access to instructors *during transmission* via phone calls, faxes, or electronic response pads that allow students to ask questions and respond to instructors' questions.

The chart on this page shows the degree of access *generally* associated with particular distance learning techniques, though individual distance learning programs may offer more or less access to instructors than is depicted in the chart.

In evaluating the value of a particular distance learning technique, it may be less important to focus on the level of technology required than on the degree of interaction between the instructor and students. The rest of this distance learning discussion focuses on the delivery methods that include some interaction with an instructor: correspondence courses, telecourses, Internet courses, audioconferences, videoconferences, and docuconferences.

Implementation

Many distance learning techniques have been in use for years. Some of the more technological ones are still not widely used. A 1995 survey found that organizations' use of various distance learning methods to provide instruction to their own employees ranged between nine percent for distance learning via computer, to 92 percent for videotapes.[3] Today, computer and telecommunications companies offer a range of equipment that companies or instructional institutions can purchase to set up their own distance learning programs.

To date, few, if any, local providers are using distance learning to deliver services to *multiple* small and mid-sized companies. **North Iowa Area Community College**, however, arranged for the delivery, via videoconferencing, of a couple of targeted training programs

Degree of Access to Instructors *Generally* Associated with Particular Distance Learning Techniques

Distance Learning Techniques	Access to Instructors		
	No Access to Instructors	Delayed Access to Instructors	Simultaneous Access to Instructors
Books	●		
Audiotapes	●		
Videotapes	●		
Computer-Based Training	●		
Correspondence Courses		●	
Telecourses		●	
Internet Courses		●	
Audioconferences			●
Videoconferences			●
Docuconferences			●

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[3] "1995 Industry Report," *Training*, October 1995. Survey was of U.S. organizations with 100 or more employees.

to *single* companies. Other organizations are using distance learning in ways that might be adapted for use with multiple small and mid-sized companies.

A cooperative partnership – composed of educational and economic development institutions, resource agencies, and technology communications organizations in northeast and north central Nebraska – is in the process of creating a **Lifelong Learning Center**, which will provide a variety of educational services to local citizens and businesses, including access to two-way interactive video and audio classrooms and computer labs. The center is designed to connect northeast and north central Nebraska to educational resources throughout the state, nation, and world.

The federal government operates a variety of distance learning programs. The **Forest Service** provides supervisory training via satellite dish transmission and the **Federal Aviation Administration Academy** delivers instruction via one-way videoconferencing and electronic response pads. The **Office of Personnel Management** offers correspondence courses, the **Department of Defense** uses the Internet to teach dependents on different continents, and the **Government Accounting Office** uses fiber-optic lines during training to see and hear people in different locations. **The military**, of course, has been mailing instruction on computer disks, videodiscs, and CD-ROMS to service people for over two decades.

Organizations' Use of Distance Learning Techniques

Instructional Method	Percentage Used
Videotapes	92%
Audiotapes	50%
Computer-Based Training	48%
Videoconferencing	18%
Teleconferencing	16%
Distance Learning via Computer	9%

"1995 Industry Report"
Training, October 1995

Distance Learning Resources

- **United States Distance Learning Association.** Nonprofit association promoting the development and application of distance learning for education and training. P.O. Box 5129, San Ramon, CA 94583, phone 800/275-5162 or 510/606-5160, fax 510/606-9410, e-mail shelley@usdla.org.
- **AT&T's Center for Excellence in Distance Learning** (http://www.att.com/cedl/). Information about AT&T products and services, a collection of articles on distance learning, and connections to universities that provide more information.
- **International Centre for Distance Learning** (http://acacia.open.ac.uk/). Database of references and abstracts for over 7,500 documents.
- **University of Wisconsin's Distance Education Clearinghouse** (http://www.uwex.edu/disted/home.html).
- **Distance Education Online Symposium** (DEOS-L). Listserv with approximately 2,100 participants from 51 countries. Send e-mail to listserv@psuvm.psu.edu with message: subscribe DEOS-L Your Name.
- ***Distance Education Resource Guide*** (1993). Directory of distance education programs at over 300 community colleges. League for Innovation in the Community College, 26522 La Alameda, Suite 370, Mission Viejo, CA 92691, phone 714/367-2884, fax 714/367-3885, e-mail johnson@league.org.
- ***The American Journal of Distance Education***. Disseminates information and acts as a forum for criticism and debate about research in and practice of distance education in the Americas. American Center for the Study of Distance Education, the Penn State University, 403 S. Allen Street, Suite. 206, University Park, PA 16801, phone 814/863-3764, fax 814/865-5878, e-mail acsde@psuvm.psu.edu.
- ***The Distance Educator.*** Provides current information on practical applications of distance education in business, industry, public education, and government. 8680 Navajo Road, Suite 102-152, San Diego, CA 92119, phone/fax 619/461-0625, e-mail saba@cts.com.

National organizations, such as the **U.S. Chamber of Commerce** and the **National Technological University** are broadcasting seminars to local providers who, in turn, are bringing together local firms. Some large companies are using distance learning techniques to provide training to outlying plants. **JCPenney**, for example, widely recognized for its training programs, uses a mix of workbooks, classroom instruction, on-line performance support, videos, and coaching to lead its managers and associates through the company's structured training program. Satellite broadcasts, CD rom, and on-line messaging are used to update managers' knowledge and skills on an on-going basis.

Texas A&M University has been providing distance learning opportunities for *large* companies since September 1994. The university provides classes for Texaco at its main campus in College Station, TX, and uses videoconferencing to deliver the same classes to Texaco sites in Houston and Louisiana. Texaco employees at the distant sites have the opportunity to interact with the professor, as well as with students in the other sites.

Mind Extension University offers courses and degree programs from more than 30 regionally accredited universities and education providers. Instruction is primarily delivered by cable television, satellite, or videotape, though some courses use audiotapes or computer software. The university uses electronic bulletin board and voice mail systems to allow students contact with professors or classmates at anytime. The **Going the Distance** project, another telecourse provider, furnishes distance learning degree opportunities for adult learners via a network of public television stations and 25 colleges in Nebraska.

The Telecourse People, a group of six producers/distributors of multimedia course packages, is one of many companies offering high quality video and audio programs for use in conjunction with textbooks, study guides, and other supplemental materials. They market these materials to schools, colleges, universities, government agencies, and businesses for them to use as part of their instructional efforts. Their materials may be delivered through broadcast and cable television, Instructional Television Fixed Service (ITFS) systems (transmission of television signals between fixed locations for educational purposes), satellites, learning centers, or videocassette checkouts.

A number of colleges are beginning to offer courses to students over the Internet. **Honolulu Community College** and **Kapi'olani Community College** have created courses for which remote students receive instruction over the Internet, have weekly problem-solving sessions with the instructor, and may contact the instructor via e-mail at other times.

Front Range Community College has created an innovative "cybercollege" where students anywhere in the world can take courses on demand and receive support services using a personal computer and modem. Some 200 students participate in these classes each semester. While the system is ideal for delivering courses directly to business and industry participants, few such partnerships have been established.

Cost-Cutting Techniques

The most obvious way distance learning cuts costs is by reducing the time and other expenses associated with travel – for the provider and/or the recipients. The Lifelong Learning Center expects that its telecommunication delivery methods will allow it to serve small numbers of learners in remote locations simultaneously, thereby engaging the critical mass necessary to keep costs low. North Iowa Area Community College used the Iowa Communications Network to deliver training in "flexography" from the Graphic Arts Technology Center in Clinton, IA, to its campus in Mason City, IA, thus saving the 30 individuals in the program ten hours of round-trip driving for each day of the training.

Additionally, many distance learning efforts involve sharing the same materials with multiple recipients (which spreads out development costs), possibly at the same time (which spreads out delivery costs). North Iowa Area Community College has started to build a library of training options, including tapes of satellite downlink sessions and computer-based and multimedia-based training programs.

Benefits and Costs

When providing instruction to individuals spread out over large geographic areas, distance learning can have significant benefits over traditional training programs. Courses do not have to be put together as marathon cram sessions; they can be broken up into reasonable modules and delivered over longer periods of time. Because there is no need to worry about coordinating participants' travel schedules, new classes can be put on line relatively fast. And since the provider does not have to bring all of the recipients back to one site, follow-up classes can be put together more easily.

The process of linking up individuals across distances can have value as well. An Oregon state-wide baccalaureate nursing program reported that nurses who became "electronically acquainted" with other nurses elsewhere in the state were then comfortable calling them for advice. In another distance learning program, linking students in remote sites up with other students gave them "virtual classmates" with whom they could interact (through e-mail).

Some distance learning techniques provide participants with the opportunity to have information repeated as often as needed. A videotape, for example, can be rewound and replayed if it is not understood. Downlink sites for the National Technological University's Modern Manufacturing Video Conference Series own the rights to the broadcast videotapes, and can replay them at any time.

Distance learning programs can afford access to the most skilled providers in the world. The U.S. Chamber of Commerce's Quality Learning Series pulls together some of the biggest names in management in the country. Much distance learning lets students control the schedule of delivery, increasing the likelihood that instruction will take place when it is needed. This flexibility in scheduling is also beneficial for employees with irregular schedules, such as those who travel frequently or do shift work.

Of course distance learning has its drawbacks. Having instructors and students in different locations can limit the interaction between them. This problem is compounded when an instructor is teaching large numbers of students. While some distance learning techniques are inherently active (e.g., computer-based training), most provide passive learning experiences. Instructors reaching out to very diverse participants cannot customize materials to companies' or individuals' needs. Because instructors are not on-site with the students, it is difficult for them to help the students practice new skills on the job.

While travel costs associated with distance learning programs can be much lower, design, delivery, and support costs can be much higher. Most of the more interactive distance learning techniques require a considerable up-front investment in technology. Video broadcasts tend to amplify poor teaching techniques. Instructors will need training (technical and instructional) to use technology effectively, and a wide variety of support staff will need to be prepared for their new responsibilities. In addition, most people suggest that it will also take instructors, and support personnel, more time to prepare and support distance learning programs than traditional classes.

Distance learning *technology* is definitely a two-edged sword. On the one hand it opens up myriad possibilities for new and creative instruction. On the other hand it can overwhelm the instruction, with both the instructor and the students paying more attention to

[redacted]

the media than the message. It can also fail. Computers crash. Internet and satellite links break off. Broadcasts delivered over cables can ghost or jump, and with some types of cable there is an audio delay.

Some think that having students together in classes separate from the instructor is a benefit, others think it is a cost. All agree that these students are more likely to talk among themselves than they would in a traditional classroom situation. On the plus side, these students may help clarify points the teacher is making without disrupting the entire class. On the minus side, they may not be paying as much attention as they should.

Innovations

Research shows that distance learning programs are at least as effective as traditional instructional programs[1] – if they are implemented well. Good implementation requires:

- Building the program around the students. Setting it up to meet *their* needs.
- Providing students with access to the full range of academic and administrative resources.
- Consciously building interaction between the instructor and students into the program.
- Making the learning an active experience for the participants.
- Varying the activities over the course of a session so that the students remain engaged.
- Training the faculty. They cannot teach distance learning courses the way they teach traditional courses or they will not be able to retain students' attention.
- Providing instructors with the support – administrative, technical, and instructional – they need.
- Making the technology as transparent as possible: helping learners forget that it is there.
- Providing a local instructor, in addition to the distance learning educator, when "hard skills" (e.g., technical skills as opposed to management skills) are taught.

Distance Learning Instructors Must Be

- Dynamic
- Risk takers
- Visionaries
- Hungry
- Detail oriented
- Sensitive to learners
- Respected by other faculty
- Aware of the student community

Distance Learning Instructors Must Have

- Sense of humor
- Thick skin
- Good self image
- Content knowledge
- Knowledge of instructional design
- A passion for student success

Compiled by workshop participants at a National Council on Community Services & Continuing Education conference, October 1995.

What makes distance learning programs effective is what makes all learning effective: interactive, participative, actively engaging instruction. Computer-based training requires active learning and usually provides students with immediate feedback. Many Internet courses are designed to provide one-on-one interaction between the instructor and the students. Docuconferencing also requires active engagement.

The National Technological University consciously builds variety into its Modern Manufacturing Video Conference Series. Each session features a professional moderator, one or two subject matter specialists, and two or three manufacturers experienced with the process or equipment being highlighted. The university visits the manufacturers' sites before the broadcasts are aired to

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[1] Hal Hunter, "The Opposite Sector," *Training & Development*, May 1995.

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tape the processes or equipment in use. These case studies are then featured during the broadcasts.

Both the National Technological University and the U.S. Chamber of Commerce encourage additional educational support at their downlink sites. Many of the university's downlink sites provide "wraparound" sessions, bringing local experts in to give attendees information on locally available resources and more opportunity for questions and answers. Some sites build on the satellite seminars with local workshops one week before and/or after the broadcasts. Some Chamber downlink sites build larger training events around Quality Learning Series seminars, including additional speakers, facilitated discussions, meals, and other activities.

Using multiple media can make distance learning programs more effective. Some programs deliver pre-assessments and pre-training via computer before actual classes begin. This enables the provider to find out what the learning gaps are and bring everyone up to the same level before training begins. Computer newsgroups can be set up after classes have begun to maintain conversations among instructors and students and reinforce learning.

Before jumping on the distance learning bandwagon it is important to conduct a cost-benefit analysis. Most distance learning techniques are not cheap. They frequently require delivery to large numbers of people to be cost effective. While distance learning has some distinct advantages, there may be less expensive instructional methods that are equally effective.

Effective Services Characteristics

Key Advantages:
- **Using highly skilled providers.**

Key Disadvantages:
- **Not supporting practice back on the job.**

Keys to Success

- Make sure the number of recipients you have will justify the high up-front development costs.
- Prepare instructors and support staff to use the media effectively.
- Use techniques to provide individualized assistance to participants — companies and their employees.
- Encourage *active* involvement on the part of participants.
- Build variety into the program delivery.

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Computer-Based Training

Cost Reduction Methods

- **Serving multiple companies**
- **Serving multiple companies at the same time**
- **Having the provider and companies in different locations**
- **Making services more productive**

Computer-based training is any training that uses a computer as the focal point for instructional delivery.[1] With computer-based training, the computer provides training by serving as an electronic teacher or mentor. Computer-based training could easily be considered a form of distance learning, but because of its relatively wide-spread use and its unique attributes, it merits a separate discussion here.

Most computer-based training uses one or a combination of the following techniques:

- **Tutorial.** Introduces new information that must be taught in a sequential manner.
- **Drill and practice.** Provides opportunities for practice when mastery of a new skill or information is desired. Should be used after initial instruction.
- **Training games.** Supplements other instruction. Used to provide motivating and engaging opportunities for practice after a skill or new information is taught.
- **Simulation.** Provides an opportunity for experimentation, and allows students to test assumptions in a realistic context. Used most often when practicing a skill in its real context is too costly or dangerous. Also used to model real-world situations in order to build realism and relevance into the training situation.
- **Problem solving.** Helps students develop skills in logic, solving problems, and following directions. Generally used to augment higher order thinking skills.
- **Assessment.** Places and then monitors students' progress within a curriculum.
- **Demonstration or presentation.** Supports the introduction of new information. Can be used as a review tool.

Implementation

A 1995 survey found that 48 percent of organizations use computer-based training to provide instruction to their own employees.[2] Computer-based training can be quite elaborate. Many packages go beyond text-based instruction and incorporate graphics, animation, video, and/or audio into their programs. Good programs link assessment to instruction, so that students only take the training they need, and do not advance until they master each training objective.

Computer-based training packages exist for both basic skills (reading, writing, math, communication), and more job-related skills, such as computer, regulatory, management, and technical skills. **The Integrator™** computer-based training series includes modules in mathematics, communication skills, interpersonal skills, and problem-solving skills *using a functional context*

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[1] For more information on computer-based training, see the National Workforce Assistance Collaborative's publication *Selecting and Implementing Computer-Based Training* (Washington, DC: National Alliance of Business, 1996).

[2] "1995 Industry Report," *Training*, October 1995. Survey was of U.S. organizations with 100 or more employees.

approach. This means that exercises are job-specific and have basic skills content taken directly from the workplace or occupational training programs.

LexIcon sells computer-based training programs that use *hypertext* to link together job-related and basic skills instruction. Training modules on such topics as hazardous materials, total quality management, and communications are backed up with instruction on reading graphs or understanding difficult words and technical terms. Students work through the job-related instruction and only call up the supporting basic skills instruction, via hypertext, when they need it.

Computer-based training can vary along a number of dimensions: timeliness, customizabilty, and instructional format.

- **Timeliness.** All computer-based training provides great flexibility in when training is offered, though some is more flexible than others. For example, computer *training instruction* occurs separate from job performance, at times set aside during the work day or before or after work. Computer *performance support systems*, however, provide on-line support for actual work tasks as employees are doing their jobs. (See the box "A Study in Contrasts.")
- **Customizability.** The degree to which computer-based training programs can be customized to company needs varies greatly. At one extreme are *off-the-shelf* packages where no modifications can be made. At the other extreme are *customized* programs, built from scratch, to company specifications, by professional computer-based training developers. In between are programs that allow companies to insert their own technical vocabulary in lessons or select the parts of a training package that are relevant to their needs, and authoring systems that let companies insert practice reading materials and create practice exercises from materials used on the job or in the employee handbook.

A Study in Contrasts

- **Training Instruction.** Bank loan officers receiving computer-based training instruction on filling out a new loan form would work through a sequential computer-based training package, separate from actual job performance. Upon completion of the training, the officers would be able to return to their work and complete the loan form correctly.
- **Performance Support System.** Bank loan officers being prepared to fill out a new loan form using a performance support system would not participate in a sequential training program. Instead, the bank would load the loan form onto officers' computers, along with optional instruction modules (the performance support system), and the officers would then call up instruction on specific aspects of the form as they were filling it out and had questions.

- **Instructional format.** Computer-based training can be offered as an *independent study* exercise, where trainees are expected to work through the instruction on their own, with little or no support. It can also be offered in a *classroom* environment, either at the company site or a provider's site, where trainees have access to an instructor, who can provide them with assistance.

A number of providers use computer-based training to serve multiple companies. The **Literacy Initiative's Read & Achieve** program provides computer-based, job-specific, basic skills training to company employees in Columbus, OH. An advisory committee of business representatives helped shape the Read & Achieve program, ensuring that the program met the business community's needs.

The **DeSoto County Literacy Council's Library Learning Link** uses a wide area network to deliver computer-based training to eight northern Mississippi counties through libraries, businesses, community colleges, and Head Start centers. The **Vermont Institute for Self Reliance** uses a computer lab in a central learning center to provide workforce literacy training to three companies.

The California community college system has developed a plan to help its **Workplace Learning Resource Centers** provide customized computer-based training to companies, while reducing duplication of effort. Community college workplace education providers in the state will use a common authoring system to develop customized computer-based training programs for their business clients. The modules developed will then be disseminated from a statewide library for other community colleges to use or adapt.

Cost-Cutting Techniques

Computer-based training can be very cost effective if it is used with a large number of individuals. The development costs for computer-based training are much higher than for traditional training, but delivery costs are much lower. The delivery costs can be virtually zero for a provider that just hands over a computer-based training package. For providers that also offer some instructional support, delivery costs are reduced because they can serve more recipients at the same time.

Companies' participation costs are lower as well. Computer-based instruction requires less training time than instructor-led training. (The amount of reduction ranges from 20 to 80 percent, with 40 to 60 percent being the most common.) This greater productivity is generally attributed to tighter instructional design, the option for participants to bypass content they do not need, and the opportunity for participants to focus on those sections of a course they have not yet mastered.[7]

All of the computer-based training programs identified for this publication receive some kind of subsidy for the services they provide. The Vermont Institute for Self Reliance is supported by a U.S. Department of Education workplace literacy grant, and a U.S. Department of Education grant helped start the Library Learning Link. The Library Learning Link now relies on state funds and volunteer assistance to cover the costs of ongoing support services, though revenue from business site license rentals is used to maintain and upgrade the system.

Because California's computer-based workplace education program is being operated out of the community colleges, the state is underwriting some of the program's costs. Substantial public and private support was used to underwrite the development of the Read & Achieve program. The Literacy Initiative is in the process of patenting the Read & Achieve process, and plans to eventually make the program self-sustaining.

Benefits and Costs

In addition to being cost effective, computer-based training offers several advantages over other forms of training, including:

- Active engagement of the learner,
- Focus on only those skills trainees need to learn,
- Immediate feedback,
- Unlimited practice opportunities,
- Consistent, reliable instruction, and
- Flexible delivery schedule.

There is very strong evidence that computer-based instruction results in an equal or higher quality of learning over traditional instruction.[8] If the training is particularly content dense (many new concepts presented close together) or utilizes a hierarchy of skill acquisition (where current concept mastery is dependent on mastery of earlier concepts), computer-based training's integration of text, sound, graphics, and video facilitates the learning process. On average, people remember

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[7] Brandon Hall, *Return-on-Investment and Multimedia Training* (San Francisco: Multimedia Training Newsletter and Macromedia, Inc., 1995).

[8] Ibid.

- 10 percent of what they *read*,
- 20 percent of what they *hear*,
- 30 percent of what they *see*, and
- 50 percent of what they *hear* and *see*.[1]

so computer-based training's rich, multi-sensory delivery system can facilitate greater retention of new knowledge.

There are two major drawbacks to computer-based training: 1) it frequently is not adequately customized to company needs, and 2) it may not provide individuals with the personalized attention they need. In addition, because development costs are higher for computer-based training, it is only cost effective if it is used by a large number of individuals.

Innovations

As discussed earlier, there are several ways to customize computer-based training to company needs short of developing an entire program from scratch. At the very least, providers can supplement computer-based training with work-related materials.

The Read & Achieve program analyzes the skills required for specific jobs and departments, and then uses only the appropriate subset of skills from its larger computer-based instruction system as the base for each company's program. The California community colleges will be using an authoring tool to develop customized computer-based training, but will then save money by sharing their work with each other and not duplicating what others have done.

Personalized attention is also possible. Most computer-based training provides some degree of individualization. Pre-assessments guide individuals to the training they need. Ongoing assessments determine whether they have mastered concepts or whether they need further instruction. The tireless nature of computer-based training allows individuals to repeat instructional units as often as necessary.

In addition to this computerized personalization, many providers offer human assistance. The DeSoto County Literacy Council assigns a literacy tutor or community college teacher to work with each business using the Library Learning Link. The Vermont Institute for Self Reliance employs a literacy instructor at its learning center to provide instruction to those using its computer lab.

Effective Services Characteristics

Key Advantages:

- **Encouraging active participation.**
- **Using highly skilled providers.**

Key Disadvantages:

- **Not supporting practice back on the job.**

Keys to Success

- Make sure the number of recipients you have will justify the high up-front development costs.
- Customize programs to company and individual needs and contexts.
- Provide live instructional options to back up computerized instruction.

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[1] Keith Saft, *How Not to Get Burned, When Lightening Strikes: A Practical Approach to Producing Interactive Media* (Pittsburgh, PA: All Night Media, 1995).

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Trained Volunteers

Cost Reduction Methods

- Subsidizing costs

Trained volunteers are used to provide workplace training services in a number of ways. In most instances, volunteers are used to *supplement* the work of paid professionals. These volunteers usually provide one-on-one or small group (three to five students) tutoring to students who have missed classes, are having trouble grasping particular concepts, or started training with lower skills than their peers. It is becoming more common, however, for trained volunteers to be the primary, or sole, instructional provider in workplace settings.

Implementation

While most trained volunteers who provide workplace education come from community-based organizations, some universities, community colleges, and adult education systems have large and active programs for volunteer tutors. Trained volunteers are most commonly used as part of a workplace delivery strategy for basic literacy or English as a Second Language (ESL) services. These programs have a long history within the volunteer social services community. The movement of volunteerism into the *workplace* literacy field, however, is a more recent phenomenon.

Both **Laubach Literacy Action** and **Literacy Volunteers of America, Inc.**, two major national literacy associations, actively support workplace literacy efforts. When asked to identify volunteer literacy programs offering workplace instruction, Laubach Literacy Action was able to generate a list of 181 programs in 37 states, while Literacy Volunteers of America, Inc., reported 176 affiliates. In addition, Laubach Literacy Action maintains a Center for Workplace Literacy, which works directly with companies that have a need to improve the literacy skills of their workers. Literacy Volunteers of America, Inc., recently published *LVA Works: A Guide to Workplace Education* to help its affiliates develop effective workplace education programs.

While literacy is the most common need addressed by trained volunteers, there is no reason volunteers cannot be used to deliver a broad range of workplace education instruction, provided they receive the proper training, support, and resources. A number of executive volunteer services, for example, are starting to offer the services of retired business professionals to small and mid-sized businesses and nonprofits. In general, however, it may be difficult to find many individuals willing to volunteer their services in fields other than literacy.

Cost-Cutting Techniques

Using trained volunteers reduces the cost of services by subsidizing them. One of the major components of cost – salaries – is eliminated for volunteer staff. However, the use of volunteers is not free, as costs must still be paid for the training, support, and administration of volunteer services.

Additional subsidies may come from other sources. The **Springfield Adult Basic Education** program uses state and federal dollars to cover the costs of its services, and the Ozarks Technical Community College provides space and advertising for its services. The **McHenry County College Adult Education and Literacy** program receives the typical subsidies inherent in being a public college program.

[redacted]

Benefits and Costs

Because the volunteers usually provide one-on-one tutoring, they can furnish participants with completely individualized assistance. This assistance involves continuous interaction between the volunteer and the student, entails active participation on the part of the student, and can be provided on an "as needed" basis. Because the volunteers work so closely with the students, they are also in a position to help the students apply their new skills to their jobs.

The main drawback to this method of delivery is obvious: it frequently relies on nonprofessionals to deliver services (though it may use retired professionals), potentially lowering the quality of services clients receive.

Innovations

Both the Springfield Adult Basic Education program and the McHenry County College Adult Education and Literacy program try to build the skills and support the activities of their volunteers. In both programs, volunteers work under the supervision of paid instructors, one-on-one with students who need additional assistance. The Springfield Adult Basic Education program prepares its volunteer tutors with 12 hours of Laubach tutor training before beginning work, and with in-service programs scheduled for its paid instructors.

The McHenry County College program provides volunteers with 16 hours of training in either general literacy or English as a Second Language. After this training, volunteers that express an interest in working in companies are provided an additional orientation – which includes an on-the-job experience scheduled between classroom instruction – to prepare them.

Effective Services Characteristics

Key Advantages:
- **Targeting individuals' needs.**
- **Promoting provider-recipient interaction.**

Key Disadvantages:
- **Not using highly skilled providers.**

Keys to Success

- Train Volunteers thoroughly.
- Provide instructional support to volunteers while they are working.

Conclusion

The five delivery strategies discussed in this publication highlight numerous opportunities for providers to serve small and mid-sized companies cost effectively. None are panaceas. Each has the potential for sacrificing quality to economy. Some, if used inappropriately, could even prove to be *more* costly than traditional service delivery strategies.

In deciding which service delivery strategies to pursue, providers should consider a number of things:

- Their own capabilities, or competitive advantage;
- Their access to needed equipment and materials;
- Their customers' key needs, or the characteristics of effective services most important to their customers; and
- Their customers' ability to access different types of services.

Providers should then look at this information in light of the benefits and costs of each strategy, in order to decide which approach, or mix of approaches, will best enable them to meet their customers' needs cost effectively. These benefits and costs, beyond the potential for reducing the costs of services, are summarized in the chart below.

Benefits and Costs of Different Service Delivery Strategies

Service Delivery Strategies		Benefits	Costs
Learning Consortia		• Opportunity for members to learn from each other • Opportunity to access training better suited to members' needs	• Long development lead-time • Significant on-going support • Potential loss in customization • Potential loss in support at company sites
Walk-In Centers		• "Just-in-time" services • Hands-on, active learning	• High capital investment • Significant planning effort • No support at company sites • Potential loss in customization
Distance Learning	All	• Access to most skilled providers in the world • Can enable extremely flexible scheduling • Can allow for repeating training as often as needed	• Significant development time • Limited interaction with instructors • Mostly passive learning experiences • Little possibility of support at company sites • Potential loss in customization
	Technology-Based	• Can build links among trainees	• High capital investments • High investments in training
Computer-Based Training		• Active engagement of the learner • Ability to repeat training as often as needed • Flexibility in scheduling	• High capital investments • Significant development time • High investments in training • Potential loss in customization • Potential loss in support at company sites
Trained Volunteers		• Usually provide individualized instruction • Potential for providing support at company sites	• Significant investments in training and supervision • Potential loss in quality

Used with care and creativity, the five strategies presented in this publication could help service providers open up whole new markets for themselves – small and mid-sized companies – markets thought by some to be the key to America's future economic prosperity.

The rest of this publication contains five detailed case studies and 26 one-page summaries of programs delivering high-value services at relatively lower costs. This information should give providers additional insights into how to set up programs like these themselves.

Case Studies

The following case studies provide information on five different programs employing three of the cost effective service delivery strategies highlighted in this publication: learning consortia, walk-in centers, and computer-based training. The studies are designed to give readers an understanding of how the programs operate and any implementation issues they might face in developing comparable programs.

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Lancaster Industrial Training Consortium 36

Business and Industry Services Center 43

Regional Manufacturing Technology Center 50

California Community College Workplace Education Program 58

One-page summaries of each of these programs are also included in the next section.

Consortium for Supplier Training

The Consortium for Supplier Training (CST) was established in late 1992 by a handful of North American-based, quality-focused, global companies to improve the performance of their suppliers. To achieve this goal, the Consortium sponsors a network of supplier training centers (STCs) which offer a full complement of performance improvement tools – including assessments, training courses in Total Quality, and implementation and follow-up – to Consortium members' suppliers, as well as non-suppliers.

> *"A world class training system that accelerates supplier learning and improves performance."*
>
> Vision
> Consortium for Supplier Training

The Consortium was created in response to increased global market competition requiring improved product quality at reduced prices. The Consortium's member companies had found that they could not sufficiently improve product quality by using quality practices in just their own firms; they also had to promote quality practices in their suppliers. Rather than each member company investing in upgrading all of its suppliers, Consortium members sought a way to share the costs for and streamline the process of improving suppliers' performance.

The process the Consortium uses to provide supplier assistance is: 1) identify supplier needs; 2) identify and/or develop courses and other services to meet supplier needs; and 3) offer the services as cost-effectively as possible through a network of recognized educational institutions – community colleges, universities, or technical schools with active industrial outreach programs.

Program Description

The Consortium currently consists of six full member companies: Bayer Corporation, Chrysler Corporation, Eastman Kodak Company, Motorola, Texas Instruments, and Xerox Corporation. There are also 12 associate member companies: AEG Transportation, Alcoa, Deloite & Touche, Duquesne Light, Kennametal, Medrad, Oberg, Price Waterhouse, Respironics, SEMATECH (a consortium of ten U.S. semiconductor manufacturers), Texaco, Inc., and Westinghouse.

Consortium members pair with, or sponsor, educational institutions to serve as supplier training centers. These STCs then become the delivery point for services.

The Consortium members' individual suppliers – both present and future – are the Consortium's target customers. In most instances, participation is voluntary for Consortium suppliers. A few members, however, require their suppliers to take specific courses.

Consortium for Supplier Training Supplier Training Centers

- Dallas County Community College District, Dallas, TX
- Duquesne University, Pittsburgh, PA
- Finger Lakes Community College, Canandaigua, NY (Rochester area)
- Mesa Community College, Mesa, AZ
- Monroe Community College, Rochester, NY
- Northern Essex Community College, Haverhill, MA (Boston area)
- Oakland Community College, Auburn Hills, MI (Detroit area)

STCs offer three types of services: 1) assessment, 2) training (or other interventions), and 3) implementation and follow-up. The Consortium currently sponsors 11 courses, but expects to add more every year. Consortium courses typically last eight to 24 hours, and may be delivered in a variety of formats, including full-day, evening, or weekend sessions.

Consortium members undertake rigorous procedures to guarantee the quality of the courses offered through the program. First, they control course content. Five of the Consortium members contributed quality courses they developed for their own internal use to the Consortium training effort.

Second, they ensure the skill of the STC course instructors by training and certifying them. Consortium-approved master trainers use strict, standardized guidelines, created by the Consortium based on members' own internal company guidelines, to certify the instructors delivering courses through the STCs.

The Consortium categorizes its 11 courses as "required" or "elective." All STCs have to have someone on staff trained to deliver each of the required courses. And, while they need to offer all elective courses at least once a year, they may use an instructor from another institution for delivery. This enables the STCs to focus their attention on those courses that meet their customers' needs. STCs may offer the Consortium training courses to the public as part of their regular course offerings, but member companies' suppliers may be notified and given priority for registration.

Although the Consortium focuses on quality-related services, some of the STCs have taken the initiative to integrate other course offerings into the program to help supplier companies become more competitive. All STCs have assessment tools to identify a range of activities companies may need to undertake to become high performance workplaces, including workplace literacy and skill training programs, installation of new technologies, and adoption of new workplace processes and workforce practices.

Consortium for Supplier Training Course Curriculum

- Using the Malcolm Baldrige Criteria to Improve Your Company's Competitiveness
- Introduction to Techniques for Phased Process Quality Improvement
- Utilizing the Six Steps to Six Sigma
- Manufacturing Cycle Management - A Systems Overview
- Design for Manufacturability
- Introduction to Total Quality
- Partnering
- Problem Solving
- Performance Based Equipment Training
- Business Process and Cycle Time Management
- ISO 9000

Results

The Consortium for Supplier Training benefits member companies, supplier companies, and the educational institutions that serve as supplier training centers, as well as the local economies where the companies are located and the nation's overall competitiveness. The primary benefit for member companies is an improvement in the performance of their suppliers. This improvement enables them to increase customer satisfaction and gain a competitive advantage, without each of them individually having to undertake the training of every one of their suppliers.

Texas Instruments (TI) is a representative example of a Consortium company. TI has over 14,000 suppliers in the U.S., approximately 10 percent of which (1,400) supply 90 percent of all its materials and services. Of these 1,400 suppliers, 68 percent have fewer than 500, and 50 percent have fewer than 200 workers. These companies cannot afford to provide training to their employees on a continuous basis. The Consortium for Supplier Training was created to provide such companies with a cost-effective alternative for improving their performance.

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Supplier companies benefit as well. First, they do not have to participate in all of the quality programs developed by each of their customers; the customers have agreed on a single, common program. Second, the suppliers do not have to develop courses or hire expensive consultants themselves; they can send employees, as needed, to local STCs, or receive on-site training plus implementation and follow-up from STC consultants. Finally, and most importantly, the assistance suppliers receive helps them to improve their own performance, and thus their profitability.

The educational institutions serving as STCs gain both products and markets. Consortium member companies supply them with high-quality, business-certified courses they can sell to all companies within their communities. Members also encourage their suppliers to attend these courses, and even take responsibility for promoting the STCs to their suppliers.

Educational institutions' participation in the Consortium brings them prestige and recognition for providing high quality services. It strengthens their links with the business community, helping them target their courses to companies' needs and build a customer base to which they can offer additional products and services.

The Consortium adopted Motorola's evaluation process and uses it with all Consortium courses. Participants are asked to rate their level of satisfaction in five areas: relevancy, learning, course design, instructor, and overall course. The responses from suppliers have been very positive in each of the categories, and have garnered the Consortium an overall customer satisfaction rating of 96 percent.

History

In February 1990, when the vice presidents of human resources in four companies – Boeing, Digital Equipment Corporation, Motorola, and Xerox Corporation – were meeting to discuss their companies' internal quality training programs, they began to raise questions regarding supplier training. While two of the companies (Motorola and Xerox) were required, as Malcolm Baldrige Quality Award recipients, to share information on quality processes, all of the companies were concerned about promoting quality in their suppliers. The vice presidents agreed to form a task force to examine the need for supplier training.

> *"As representatives of Quality-focused global companies headquartered in North America, our mission is to provide knowledge and methodologies to our suppliers which will enhance the quality of our products and achieve customer satisfaction."*
>
> Mission Statement
> Consortium for Supplier Training

Members of the task force decided to share among themselves, and with their supplier companies, courses and information that were neither proprietary nor gave away competitive advantage. Many of the courses they shared had been developed within the task force companies, and in some cases, were already being offered on the open market. From sharing training courses, the group moved to evaluating the courses, and then to endorsing a set of courses as the task force's standard.

In 1992, the task force decided to form the Consortium for Supplier Training (CST) to manage the delivery of the training courses they had endorsed. Lawyers from each of the founding members hammered out legal agreements to ensure that antitrust laws would not be violated. Surmounting the legal issues was a time-consuming and arduous process. What resulted was a six-page membership agreement each company signed to join the Consortium.

Structure

Currently, the Consortium for Supplier Training consists of six full and 12 associate industry members, and seven supplier training centers.

Full industry members sponsor supplier training centers and/or cover the cost of training instructors. Associate members do not have to sponsor an STC. They can participate with full members in sponsoring an STC and/or its instructors, or they can just contribute funds to a full member.

Most of the supplier training centers are located near sponsor companies. Current members are planning to enlist new Consortium members from geographic regions where their own supplier bases are strong but where they don't yet have an STC, so that the new members can sponsor training centers in those areas. California, for example, is home to many of the Consortium members' suppliers, but there is not yet an STC in the state.

The Consortium for Supplier Training is managed by an advisory board – composed of five of the companies that are full Consortium members – which is responsible for the strategic direction and oversight of the Consortium. This board represents the industry members and coordinates the network of supplier training centers.

The responsibilities associated with being a Consortium member have evolved over time. Member companies now have to sign a simple one-page membership agreement containing the Consortium's vision and purpose and a commitment to establish a network of STCS and share curricula and materials. A more detailed list of responsibilities is contained in the Consortium's bylaws, which can be more readily amended by the Consortium's members.

Originally, industry members were required to provide quality courses for the program and to sponsor a single training site. Now industry members do not have to be course owners, and a single industry member may sponsor more than one training center, or multiple industry members may pool resources to co-sponsor a single training center.

Consortium membership still requires a substantial financial commitment. First, each Consortium company must supply a manager to coordinate activities with the STC it sponsors and with the Consortium. Second, each company must contribute towards the cost of certifying instructors for the courses offered by its STC.

The Consortium operates under strict rules of conduct. Roles and responsibilities, some contractual, are clearly defined for all participants, including the supplier training centers. Criteria for selecting educational institutions as training sites and certifying instructors are

Requirements for Full Consortium Membership

- Sign the membership agreement.
- Identify and qualify at least one supplier training center (STC) within one year.
- Allocate the equivalent of one person per STC as the "site sponsor."
- Pay for the certification of all courses installed at the sponsored site(s).

Consortium Advisory Board Roles and Responsibilities

- Set the strategy and develop policies for the Consortium.
- Determine the instructor qualification process.
- Maintain Consortium by-laws and membership agreements.
- Establish supplier training center model specifications.
- Manage Consortium membership expansion and balance.
- Facilitate Consortium communications.
- Review STC performance provided by the training managers and facilitate independent quality systems reviews.
- Determine curriculum needs.
- Establish and maintain a standardized course evaluation process.
- Approve supplier training centers.

strictly enforced to ensure quality. Each STC is required to employ an on-site program manager, and the centers must recoup their delivery costs from the fees that they charge.

The Consortium for Supplier Training is not a static entity. The advisory board is taking on more decision-making and policy-setting functions, and new committees are being developed to manage the Consortium's curriculum and marketing functions.

The Consortium's curriculum and training delivery methods are under review. Currently all of the Consortium's courses have been developed by member companies, but courses from outside vendors are being considered. Consortium assistance has expanded from simply supplying courses to offering hands-on technical assistance as well. Some of the STCs are experimenting with delivering courses via video, CD rom, or other distance learning techniques. If successful, these could lead to a total restructuring of the Consortium's delivery mechanism.

Finding ways to expand the Consortium's reach continues to be a priority. Members are looking into ways to encourage, or possibly require, their suppliers to participate in training. They are also beginning to look into providing training for their second and third tier suppliers (their suppliers' suppliers). The Consortium has developed marketing materials (brochures and a video) targeted externally to supplier (and other) companies to encourage them to participate in Consortium programs, and internally to colleagues in their own companies to encourage them to promote the programs to the suppliers with whom they work.

Supplier Training Center Roles and Responsibilities

- Be affordable.
- Have instructors "certified" in the STC curriculum.
- Apply tools and consult on implementation.
- Provide an adult learning environment.
- Handle all aspects of course delivery, staff, tuition, logistics, evaluations, course materials, production, and enrollment.
- Provide feedback using a common evaluation process.
- Meet all state and federal regulatory and non-discriminatory requirements.
- Adhere to all copyrights and licensing agreements.
- Provide open enrollment with preference to Consortium members' suppliers.

Keys to Success

The Consortium for Supplier Training is a cost-effective delivery strategy for all of the players involved. Member companies share the costs of developing training among themselves, rather than each developing duplicate training courses. Supplier training centers receive high-quality training courses, and are prepared to deliver these courses at little or no cost to themselves. And supplier companies pay nothing towards the cost of training development, and are able to share the costs of training delivery with other companies sending their employees to the same sessions.

The Consortium identifies training needs within the supplier community, and develops courses to meet those needs. Working together, member companies ensure that the training courses they offer meet the highest standards in the world. The Consortium continually evaluates the training sessions being delivered, ensuring that both content and delivery are kept up to standard.

Community colleges and other educational institutions provide an ideal training distribution system, with the potential of reaching 80 percent of the member companies' combined supplier bases. Delivery schedules are flexible, established to meet the needs of the local supplier companies. Consortium companies provide direct, often personalized, marketing to their suppliers, and the STCs may give these suppliers priority in enrollment.

Educational institutions receive multiple benefits from participation. In addition to the curricula and its associated training, they are provided with help in marketing their new line of services to local companies. They also can use their new business connections as markets for other products and services, and as a base for promoting economic development in their communities.

> *"We believe what we are doing is the right thing for U.S. business and the Consortium companies, and that it will make a difference for industrial training in this country."*
>
> Patti Glenn
> Texas Instruments

Issues to Consider

The Consortium for Supplier Training is an excellent example of how high-quality training can be delivered to small and mid-sized companies cost effectively. It is a collaborative venture that combines the knowledge base of a number of large companies with the delivery capacity of existing educational institutions.

As a collaborative venture, though, it has its own drawbacks. Collaborative processes are time consuming and expensive. They require high levels of trust and commitment from all members. Working out agreements and defining roles within a collaborative may take several years – several years before any of the collaborative's objectives can be addressed.

The Consortium's main challenge today is to increase supplier company participation. In 1995, over 200 supplier companies participated in the training, with 12,000 individuals (from both supplier and non-supplier companies) trained. This is a considerable improvement over the Consortium's start-up years – it trained only 1,100 individuals in 1993 and 1,400 in 1994 – but far below the Consortium's goal.

Consortium members could benefit from enlisting their colleagues as partners in recruiting supplier companies. Frequently, it is the company production managers who have the closest contact with suppliers and know what the suppliers' development needs are. The Consortium is just beginning to directly market these key "influencers" in their companies, educate them about what the Consortium is and can do, and encourage them to promote supplier participation in Consortium programs.

Finally, the Consortium must continue to work on demonstrating a link between participation in STC programs and improved supplier performance. It takes more than just attendance at training classes to improve performance – the training concepts must be applied in order to alter companies' internal work processes. The Consortium's three phase program of assessment, training (or other intervention), and implementation and follow-up may be the recipe for success, but more companies need to go through all three phases, and more time needs to pass before this can be determined conclusively.

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Lancaster Industrial Training Consortium

The Lancaster Industrial Training Consortium is a membership organization of 22 manufacturing companies and six educational institutions working to develop both incumbent and unemployed workers. The consortium acts as a major resource for Lancaster County businesses by developing training curriculum, sponsoring technical training programs, coordinating resources between area educational institutions and companies, and providing a network for sharing information and expertise on issues related to workforce development.

The level of unemployment in the Lancaster County area remains among the lowest in the country. The economic base of the county consists primarily of small businesses across a wide range of industries, including manufacturing, agriculture, and service. This broad economic base has provided the area with a stable economy which has remained strong during economic cycles and shifts.

> *"Membership in the consortium allows us to share best practices with other companies and to provide input to the local learning institutions about our skills and training needs."*
>
> Linda Brennan
> Johnson & Johnson MERCK

The Lancaster Industrial Training Consortium was formally organized in 1991. The Lancaster County Area Vocational-Technical Schools serves as the fiscal agent for the consortium, and the Ben Franklin Partnership Program, a state-funded foundation providing assistance to projects that improve the economic competitiveness of Pennsylvania, provides a large part of the consortium's financial support. The consortium is governed by an advisory board made up solely of industry representatives, and is staffed by an executive director.

Program Description

The 22 manufacturers and six educational institutions of the Lancaster Industrial Training Consortium seek to increase the capacity and quality of their training and information exchange. Business membership is limited to the manufacturing industry to preserve the consortium's focus. A number of the companies in the consortium are older, traditional companies that are making dramatic changes in the way they operate and train their employees. While the consortium is not presently seeking new members, it is re-admitting some companies that had previously been members, but had discontinued activity in the consortium for various reasons. The education members of the consortium include vo-tech schools, community colleges, and universities.

> *"I wear many hats in my position as Human Resources Manager, and I cannot devote my efforts full-time to training issues. The consortium members share their successes and failures. This feedback can help keep me from going down the wrong path."*
>
> Jan Elsen
> Fenner Manheim

The consortium's advisory board plans to conduct an annual survey of its members to determine training needs. The results of this survey will be used to plan consortium activities and set priorities for the use of consortium funds. The consortium's members and executive director will use the survey results to identify, develop, and conduct workforce training sessions that will have lasting value to both employees and the companies.

Training is provided through a number of avenues. First, if there is sufficient interest among members, the consortium may choose to use its own funds to sponsor a workshop or seminar. A nominal fee may be charged for attendance at these events.

Second, member companies may contract with one or more of the consortium's six education members to conduct training for specific in-house needs. A portion of the financial support from the Ben Franklin Partnership Program is designated to reimburse member companies for up to 20 percent of the cost of this contract training. Disbursement of the Ben Franklin funds is handled by the consortium, leaving the companies to pay the provider only for their share of the training cost.

> *"Before the Consortium, we were dissatisfied with the unanticipated politics between and within the various educational institutions with which we worked."*
>
> Linda Brennan
> Johnson & Johnson MERCK

Third, members are encouraged to share their own internal training with employees from other companies, for a per-person charge. By sharing training, the host company is able to defray costs, and the invited companies, often the smaller of the consortium's companies, gain access to training they might not be able to afford otherwise. Host companies bill participating companies directly. Sharing internal training has become such a valued activity that some companies schedule their internal training in consultation with other member companies.

In 1994, the consortium arranged a full-day training conference for its members. Workshops were conducted by experts from within each member company on a variety of topics. These topics were selected from a list of training needs compiled from a survey of member companies. The conference allowed each member company to highlight some of its training strengths, and to learn from the experiences and expertise of other companies. The conference was particularly successful because all the training came from staff within member companies. The conference revealed the level and breadth of knowledge contained within the member companies.

Because member companies had difficulty hiring qualified employees, the consortium developed the Lancaster Employment Advantage Program (LEAP), an employment preparation program for industrial maintenance occupations. In early 1995, a task committee of two companies, two providers, and the director identified core skills required for employment and developed the curriculum to teach those skills.

LEAP's basic package has eight skills courses, while the advanced package offers an additional 17 courses. LEAP is available to individuals who are unemployed, underemployed, or incumbent workers. The consortium's director is actively marketing LEAP to job training programs around the county.

Results

Since joining the consortium in 1994, Electroplaters of York, Inc., (with 100 employees) has offered four courses to upgrade the skills of 43 employees. These courses, on problem solving, troubleshooting, team building, and physics, were taught by the Lancaster County Area Vo-Tech Schools using Ben Franklin funds. The course results were impressive enough for the company to invest over $28,000 to create a training/conference room where classes could be conducted in a clean, quiet, and comfortable environment.

> *"As a small company, you get caught up in your own workplace issues. The consortium allows you to see outside those issues."*
>
> Steve Kelly
> Electroplaters of York

New Standard Corporation, a metal stamping firm which employs 350 workers (275 of whom are hourly), has been a member of the consortium since it started in 1991. New Standard has used the consortium and Ben Franklin funds to develop complete training packages in three areas: industrial electricity (14 mechanics trained), fluid power (ten mechanics), and programmable logic controllers (16 mechanics). New Standard credits the consortium with making the development of these training sessions possible, and with giving it access to faxes, phone calls, and mail notices about other companies' training sessions.

Clark Filter, Inc., has been a member of the consortium for two years. In cooperation with the consortium and Millersville University, Clark has implemented a career planning program for its 95 employees. This program involves an assessment process, individual consultations, and a career planning workshop.

Clark is also able to offer its employees access to training workshops that would not have been available had the company not been a member of the consortium. For instance, Clark's human resources manager has attended a training session on pay per skills, taught at and by Johnson & Johnson MERCK, and a session on calculating return on investment, taught jointly by The Penn State University and the Lancaster County Area Vo-Tech Schools.

In its first year in the consortium, Herrmidifier Company, Inc., made an $8,000 investment in training and consortium related activities, and realized a savings of $12,000 in reduced scrap – a savings it credits to the training.

> *"Being a member of the consortium is one of the best things we've done regarding employee training and development."*
>
> Doug Sisson
> Clark Filter

In general, member companies are taking advantage of the expertise and opportunities available to them through the consortium. They

Lancaster Employment Advantage Program

The consortium and the Lancaster County Area Vo-Tech Schools have developed a series of pre-employment classes to introduce basic skills and work experience to potential employees. The Lancaster Employment Advantage Program (LEAP) helps individuals improve their knowledge and skills and increase their chances for securing gainful employment. Participants come from job training programs, voluntary walk-ins, and company sponsorships.

The basic training, consisting of eight courses, prepares individuals for entry level positions in maintenance, machine operation, and machine setup. Individuals completing each course receive a continuing education certificate. Persons completing the eight basic courses and an additional 17 advanced courses receive a mastery of subject certificate and job placement assistance.

Employers benefit by being assured that the graduates of LEAP have proven competence in basic workplace skills and have demonstrated positive motivation and a willingness to work.

The eight courses last for 69 hours, take five weeks to complete, and are available both daytime and evening. The cost for the eight courses is $345.

are sharing more of their internal training and are searching for more ways to strengthen their network. Members see the consortium as a vital means of improving the region's economy and competitiveness, which will benefit them all.

History

In 1984, the Lancaster County Area Vo-Tech Schools formed a business advisory committee to help upgrade its industrial training programs for high school students. The advisory committee was asked to help develop new curricula and identify new equipment that the Lancaster County Area Vo-Tech Schools should acquire.

This process was so successful and satisfying for the companies involved that, in 1985, they sought to expand the Lancaster County Area Vo-Tech Schools' training services to incumbent workers. The companies saw in this effort a unique opportunity to create a program that responded directly to their needs. This program, originally called Custom Industrial Training, later developed into the Lancaster County Area Vo-Tech Schools' Workforce Development Institute.

By 1991, the Workforce Development Institute had grown to a point where the Lancaster County Area Vo-Tech Schools recognized a need both for more providers to be involved and for the effort to become self- sufficient. The Vo-Tech Schools invited five new providers to join the effort, and the active members officially created the Lancaster Industrial Training Consortium. A proposal for support was submitted to the Ben Franklin Partnership Program and, with the funds it provided, the consortium began to make plans. In 1995, the consortium hired its first executive director.

Structure

The consortium is governed by an advisory board composed of four members, all of whom represent business, and are usually the human resources or training directors of member companies. The advisory board meets at least every two months.

Advisory board members serve one-year terms, with one of the members' terms ending every quarter. This assures that the entire board does not turn over at the same time and provides consistency to the board's operation. The advisory board is authorized to make final decisions about allocating funds from the Ben Franklin Partnership program, but all other decisions are reviewed by the full membership of the consortium.

The consortium hired its first executive director in January, 1995. The director is responsible for coordinating and facilitating the consortium's training efforts, conducting needs analyses for member companies and their employees, creating an evaluation tool for consortium training sessions, and helping companies calculate return on investment for the training they conduct.

The director tracks the training needed and the training sessions offered by each company, helps match companies' needs with available training, and helps arrange for or develop training for those needs that aren't readily met. To a large extent the director's job is to facilitate the exchange of information between members.

The director also works with the educational members of the consortium to improve their

Role of the Advisory Board

1. Create and review the consortium's mission statement and objectives.
2. Review membership criteria and applications.
3. Provide guidance and direction for the consortium.
4. Facilitate communication among member companies.
5. Identify common training opportunities.
6. Respond to industry needs.
7. Perform an annual review of the director.
8. Identify opportunities to provide services to consortium members.
9. Review the allocation of resources, Ben Franklin funds, and membership fees.
10. Make recommendations regarding membership responsibilities and dues.

ability to effectively and cost-efficiently serve businesses and to understand training from a business perspective. She also helps coordinate referrals between providers if one is unable to meet the needs of a particular company.

The consortium meets monthly at one of its members' facilities. The consortium's budget for the 1995/1996 project year (PY) is $443,780, including $80,000 from the Ben Franklin Partnership Program and $363,780 consortium members donate in the form of cash, equipment, and in-kind support through their participation in consortium activities.

The Ben Franklin Program has supported the consortium for four project years, with grants of $120,000, $110,000, $80,000 and currently $80,000 for PY 95/96. The PY 95/96 Ben Franklin funds will be used for salaries ($49,200), subcontracts ($10,000), seminars ($7,300), and other expenses ($3,500).

Historically, funding from members covered their own participation in consortium activities, but did not directly support consortium projects. The consortium instituted a membership fee of $250 in PY 95/96. The revenues from this membership fee are earmarked to support development of a resource library.

Director's Responsibilities

1. Chair quarterly meetings.
2. Coordinate training among companies.
3. Conduct needs analyses and assessments within companies.
4. Administer grants.
5. Recruit companies and educational institutions.
6. Ensure communications among companies.
7. Develop companies.
8. Convince companies of the viability of the consortium.
9. Network with other organizations, consortia, and associations.
10. Identify other funding sources as needed.
11. Report to the advisory board.
12. Make recommendations and draft action plans for the consortium based on individual company needs.

Presently, the consortium is run out of office space provided by the Lancaster County Area Vo-Tech Schools. The director is paid through the Lancaster County Area Vo-Tech Schools, but is not an employee of the Vo-Tech Schools. While the director works closely with the Lancaster County Area Vo-Tech Schools' president, she reports to the consortium's advisory board.

Keys to Success

The Lancaster Industrial Training Consortium is successful because it has developed a battery of programs and services that meet members' training needs. Having member companies proactively share their training is considered to be one of the consortium's best features. While this feature was difficult to initiate at first, now that it is becoming accepted, members agree that it alone is reason enough to remain in the consortium.

The LEAP program also is seen as a key consortium benefit. It was developed through the consortium, by industry representatives, to improve the work-readiness of existing and future employees in the Lancaster area. Because industry representatives helped develop the program, consortium members are confident that trainees will graduates with skills needed on the job.

The resource library being developed for members' use will provide valuable training support for member companies. By using membership funds to create this library, the consortium is showing members an immediate and direct benefit from their financial contributions.

The skills of the executive director are another key to success. The consortium's executive director has an extensive background in industry. She is a mechanical engineer, and spent 15 years working in Lancaster area industries. In her last job prior to becoming the executive director of the consortium, she was the production manager and quality control manager for a mid-sized manufacturer, where she also had responsibility for overseeing corporate training. She brought this company into the Lancaster consortium when she was still working there.

As a representative from industry, and as someone who has been directly responsible for training within her company, the executive director is able to successfully bridge the gap between the business and educational members of the consortium.

Another key to success is the creation of a market for training services, which the consortium fostered, in the Lancaster area. Educational members are competing with each other to provide services to the business members. This market has shifted more power to the companies, and has forced the educational institutions to create services that meet the needs of business.

One characteristic that both business and educational members of the consortium agree is a key to success is the business-only policy on the advisory board. The lack of provider members prevents provider politics from diverting attention away from the consortium's primary focus on meeting industry needs and addressing industry concerns.

Consortium Goals

Short Term (6 months):

1. Design and print a brochure.
2. Secure funding for companies interested in LEAP.
3. Conduct a survey of industry training needs.
4. Organize a committee to advise on school curriculum and equipment.
5. Update the training manual.
6. Promote LEAP through the chamber, job services, etc.

Intermediate Term (12 to 19 months):

1. Evaluate LEAP.
2. Develop a structured evaluation of consortium training.
3. Increase the amount of shared training among member companies.
4. Increase peer exchange.

Long Term (3 to 5 years):

1. Expand LEAP into areas beyond industrial maintenance.
2. Make the consortium self sufficient.
3. Develop a wider customer base.

Issues to Consider

The consortium's origins stem largely from the efforts of the Lancaster County Area Vo-Tech Schools, and the consortium has continued to evolve with significant support from the Vo-Tech Schools. As a result, the consortium is frequently, and erroneously, seen as a part of, or at a minimum, too closely tied to the Vo-Tech Schools. This has caused some confusion for both businesses and other educational members of the consortium trying to understand all of the consortium's activities and policies. It also diminishes the desired impression that the consortium is business oriented.

> *"The consortium gives a group of companies the power to force schools to serve the companies' needs."*
>
> Greg Burkholder
> Lancaster County Area Vo-Tech Schools

During 1993 and 1994, the consortium experienced a decline in business involvement. Members attribute this to an increase in decision making roles for providers. The consortium became dominated by providers and moved too far away from being industry-led and industry-focused.

Whether or not the consortium can continue to operate depends on whether it can achieve self sufficiency. This will hinge on how the members respond to the end of Ben Franklin funding in another year or two. Members have accepted the introduction of $250 membership fees, but fees of at least $1,000 will probably be needed for the consortium to be self sufficient. It is unclear whether members will be willing to pay such fees.

Finally, the consortium's ultimate success requires that both business and education members have the full blessing and support of their upper management. It remains to be seen whether members will commit the significant amounts of time and money needed to sustain the consortium beyond its period of subsidy.

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Business and Industry Services Center

The Business and Industry Services Center (BISC) – a self-supporting facility of Rancho Santiago Community College, the largest community college in Orange County, CA – provides one-stop assistance to the local business community. The center houses a number of programs for small and mid-sized companies, including the county's small business development center (SBDC), business incubators, business ownership services (BOSS), contract education, quality assurance training, and a workplace learning resource center.

> *"The Business and Industry Services Center is a self-supporting facility of Rancho Santiago Community College with an emphasis on economic development. We provide entrepreneurs with a growth environment for newly formed ventures. We are the community's training and consulting partner in defining creative solutions through [our] programs of distinction."*
>
> Mission Statement
> Business and Industry Services Center

BISC specifically targets its services at the area's small and mid-sized companies, the number of which are growing rapidly. More than 1,000 manufacturing businesses have opened in Orange County since 1990, most by some of the 45,000 county residents who lost their jobs at aerospace, computer, or high-tech manufacturing companies between 1989 and 1995 (*Orange County Register*, October 8, 1995).

To better meet the business community's needs, BISC has developed numerous partnerships with, among others, the city of Santa Ana, Orange County, other county community colleges, the state Employment Development Department, and the local Job Training Partnership Act (JTPA) program and private industry council.

While this case study provides information on all of BISC's services, it contains a more in-depth review of the Workplace Learning Resource Center and its particular services to the business community.

Program Description

BISC's services include:

- **Workplace Learning Resource Center**, a literacy and basic skills program featuring a multi-modal learning laboratory equipped with computer learning systems;
- **Small Business Development Center**, no-cost, individualized business consulting services for small to mid-sized businesses and entrepreneurs;
- **Contract Education**, a wide range of customized training services, delivered at the worksite on a fee-for-service basis;
- **Quality Assurance**, instruction on such topics as total quality management (TQM) and statistical process control for college students and local businesses;
- **Business Incubators**, an executive suite service for small businesses that require a supportive environment to grow and then move into the community;
- **Business Ownership Services System**, an intensive entrepreneurial training program for laid-off and/or unemployed individuals; and
- **Labor Market Consortium**, information on employment, sales, and economic performance from 98,000 employers in the county.

BISC is generally open from 8:00 a.m. until 5:00 p.m., Monday through Friday. Each program housed within BISC, however, may establish its own service hours, depending on its clientele and training schedule. Some programs also offer courses, training, or consultations on weekends.

The workplace learning resource center (WLRC) provides English as a second language (ESL), literacy, and basic skills services. It uses a variety of instructional methods, including computer-aided instructional software, laserdiscs, online learning resources, audio cassettes, video tapes, and written texts. The center currently has ten computer stations and, funding permitting, plans to add more in 1996.

The WLRC gains most of its students through two channels. First, employees from companies contracting with the college and BISC for education and training services might use the center. Second, clients from various job training programs purchasing services from BISC may use the center.

The WLRC offers students the options of self-directed, individualized, and classroom instruction. Its schedule and instructional philosophy allow for immediate, just-in-time training, as well as long-term basic skills remediation.

The WLRC is open for drop-in, self-paced services from 8:00 a.m. until 8:30 p.m., Monday through Thursday, and on Fridays from 8:00 a.m. until 2:00 p.m. In the mornings the WLRC offers small-group instruction for job training clients who are seeking positions as bilingual clerical support staff. Noncredit, continuing education General Educational Development (GED) classes are held at the WLRC every afternoon and on two evenings. Students who attend either the bilingual clerical or the GED sessions may also use the center on a drop-in basis during the remainder of the week.

The philosophy of the WLRC is to build instruction around transferable literacy skills. As a result, the curriculum developed by the WLRC generally does not emphasize job-specific learning. Students not associated with a particular company who use the WLRC on a drop-in basis work with the WLRC coordinator during their initial visits to establish individual learning plans, and be introduced to the center and its various resources.

For those students associated with particular companies, the WLRC coordinator works with the businesses to develop specific curricula for their employees. The coordinator visits a company site and conducts general workplace literacy needs assessments, as well as literacy evaluations of company employees. The company's curriculum is then developed based on the literacy needs assessments, and individual learning plans are developed to fill the gaps between students' current skills and the skill requirements for their jobs.

Small and mid-sized businesses generally arrange to have their employees use the WLRC on a drop-in basis, but specific classes may also be arranged. Students may use the center according to their own schedules, and until they have met their learning goals. Some

Contract Education

Contract education offers a wide range of customized training and employee development services delivered at a company's worksite on a fee-for-service basis. BISC's contract training includes total quality management, statistical process control, customer service, supervision, and computer applications.

JobLink

JobLink is a workplace literacy project funded by the U.S. Department of Education, and operated by a consortium of three colleges and nine companies. JobLink established a satellite center at BISC to provide literacy training to incumbent workers of small and mid-sized manufacturing companies in Orange County. This partnership between BISC and JobLink is mutually beneficial, as BISC gains resources, instructors, and increased public access, and JobLink gains an additional service site for its businesses.

companies choose to pay their employees for a certain number of hours spent at the WLRC, while other companies require their employees to use the WLRC on their own personal time.

Companies that use the WLRC as part of a contract for education and training services pay a low, negotiated fee for their employees' access to the center. WLRC staff track attendance of students who use the center, and report this to the appropriate organization – the college, companies, job training program – monthly.

In 1996, the WLRC became a learning site for JobLink, a workplace literacy project operated by the Coast Community College District. Services funded by JobLink have expanded the resources already available at the WLRC, as well as increased the operating hours at the center.

Results

The WLRC provides English as a Second Language instruction to employees from Ingram-Micro, Inc., a distributor of computers and computer components. Recently ten Ingram-Micro employees tested out of ESL, and seven of the ten are beginning GED classes at the WLRC.

> *"They worked to know our business before they offered the instruction."*
>
> Michael Cervantes
> Waste Management of Orange County

Waste Management needed to improve the professional skills of its managers and supervisors, and asked BISC to conduct a formal needs assessment and develop a training proposal. Waste Management and BISC jointly determined that classes were needed in time management, counseling, supervisory methods, and an introduction to TQM. These classes were variously offered at the Waste Management worksite, at BISC, and on the main community college campus. Waste Management paid for the training and the staff time for employees to attend.

Results from this training include such intangibles as better attitudes from supervisors, enhanced pride and feelings of ownership throughout the company, and better working relations between supervisors and company drivers. Tangible outcomes include improved safety records, which in turn led to savings of over $500,000 in safety-related claims for Waste Management in 1995, and increased productivity. Employees from Waste Management have also become invested in furthering their education and have started using the workplace learning resource center at BISC.

Gatewood Systems and Software is one of the companies operating out of BISC's business incubator. Gatewood has developed a software package for medical offices, and provides technical support to set up and maintain computer networks and hardware.

> *"I've always been a tech guy. The small business development center helped turn my thoughts and attitudes around to business."*
>
> Kevin Gatewood
> Gatewood Systems and Software

Gatewood began working with the Small Business Development Center housed at BISC in July, 1994. Shortly thereafter, Gatewood moved into an incubator office space at BISC. The SBDC helped Gatewood create a business plan, develop marketing materials and sales strategies, and establish accounting systems. The incubator program has provided low-cost office space and light secretarial services. Gatewood pays $1 per square foot for its office space, totaling $156 per month. BISC's combined services have given this new-start company the resources, advice, and time required to become successful.

History

The building in which BISC is located was constructed in 1987 by the city of Santa Ana as a dedicated facility for business incubators. Economic difficulties and the recession of the early 1990s forced the city to seek alternative administration for the facility, and Rancho Santiago Community College assumed responsibility for managing it in 1994.

Prior to 1994, the college had operated its small business development center and business ownership services system out of the city-owned building. Upon assuming responsibility for the building in July, 1994, the college placed contract education, quality assurance, and the workplace learning resource center there to create a one-stop business assistance center. The labor market information consortium, which had been a part of the small business development center, was given its own office space in late 1994.

The college leases BISC's building from Santa Ana for $1 annually until the year 2000, at which time the city will give the building to the college.

Structure

While BISC is a part of the Rancho Santiago Community College, not all programs at BISC are managed by the college. BISC's director oversees those programs run by the community college, the outreach and marketing of BISC's services and programs, and the daily functioning of the center. The director also works closely with the programs at BISC that are not directly college-sponsored, such as the Santa Ana economic development agency, in an effort to integrate and coordinate these with other services for the business community.

The director of BISC reports directly to the Vice Chancellor of the community college district. The director is responsible for hiring all of the staff for the community college programs housed at BISC, including the WLRC staff. The director looks for staff who have a background in industry, and who have experience providing training to the business sector.

The WLRC has one permanent staff member, the center coordinator, and an assistant, who is hired with JTPA funds. A full-time, college-paid assistant will be hired in 1996. The coordinator develops all the curricula, establishes individual learning plans for drop-in students, and provides instructional assistance as required. The bilingual clerical and GED sessions are taught by grant-funded instructors.

In an effort to foster integration of services within BISC, the director holds weekly meetings with the staff of all BISC's programs. As a result of these efforts, the director reports that program staff are actively working together to address the needs and goals of their business clients. BISC plans to establish a business advisory board, but has not as yet.

Business Incubators

The business incubator program provides an executive suite service for small businesses requiring a supportive environment in order to grow and move into the community. Participating businesses receive economical lease terms and phone answering, light secretarial, photocopying, and fax services, and have access to assistance from the SBDC. Leases for the incubators are generally for one to three years, and clients pay $1 per square foot for office space.

Small Business Development Center

A comprehensive service center for small and mid-sized businesses and entrepreneurs, the Small Business Development Center offers seminars and individualized assistance on topics for new and developing businesses. The center has walk-in services, and typically offers ten hours of assistance to each client, but is available for upwards of 60 hours per client. The SBDC serves businesses that have less than $5 million in sales and fewer than 20 employees.

BSIC's marketing efforts have included print advertisements in newspapers and mailings to the business community. Because these avenues have been less effective than desired, BISC is hiring a staff person to specifically coordinate a marketing plan, including mailings, telephone follow-ups, and personal visits to potential business customers.

BISC's annual budget of $1.9 million comes from a variety of sources, including local, state, and federal government grants, Rancho Santiago Community College, fee-for-service contracts with companies, and leases from the business incubators. In 1994, revenue from business contracts totaled $250,000, while in 1995 it was projected to grow to $400,000. A goal of $600,000 in revenue from fee-for-service contracts from the business community has been set for 1996.

The workplace learning resource center had a budget of $230,200 in FY 1995. This funding came from an economic development project ($95,200 for equipment, instructional supplies, and staffing), JobLink ($75,000 for staffing), and two Perkins allocations ($60,000 for staff, outreach, and technical assistance and support).

Keys to Success

BISC's strengths are its ability to provide businesses with access to numerous services in one location, and to develop multifaceted and coordinated assistance plans drawing on its various programs.

Orange County Labor Market Consortium

The consortium collects information on employment, sales, and economic development from 98,000 employers in the county. The consortium is run through a partnership between the local community colleges, the state employment development department, the regional occupational program, and the local Job Training Partnership Act program.

BISC has been successful in large part due to the strong leadership and vision of its director. The director has facilitated and put forward a creative and cooperative plan for BISC, and is beginning to develop a common purpose among many diverse programs and services.

A commitment to customer satisfaction has also contributed to BISC's success. Waste Management reported that when problems arose with a series of workshops for which it had contracted, BISC responded immediately and resolved the issue within a matter of days. Such service and concern with quality convinced Waste Management to continue its relationship with BISC.

Finally, BISC's success has been due to support from top-level administrators at the community college. The director of BISC works directly for the Vice Chancellor of the community college district.

The WLRC's success stems from the range of service options it offers to meet the needs of small and mid-sized companies, including drop-in and class instruction. Because students can start receiving drop-in services anytime, the center can provide just-in-time training for businesses, available whenever the need arises.

The WLRC's flexibility also contributes to its success. The center is open during much of the week, has drop-in or small-group instruc-

Business Ownership Services System

BOSS is a 200-hour intensive entrepreneurial training program for laid-off and/or unemployed individuals who want to start their own businesses. BOSS provides a combination of classroom instruction and individual consulting services, and its graduates are in business when they complete the program. BOSS is funded through the Job Training Partnership Act, the Defense Conversion Adjustment Act, and the Trade Adjustment Assistance Act. There are eight BOSS training sections each year, with 15 individuals in each section.

tion, offers self-paced or assisted learning, and uses many different instructional tools, including computers, written texts, laserdiscs, online services, and videos, to meet the needs of students and businesses.

The staff and instructors at WLRC, in particular the WLRC's coordinator, are all highly qualified in curriculum development and instruction in subjects ranging from ESL to basic literacy to GED. In addition, these staff members are all very experienced using computers as instructional tools. This experience, combined with an assessment plan that matches individual skill needs with the skill requirements of particular jobs, allows the WLRC to tailor instructional plans for each employee who uses the center.

The low, one-time charge for use of the WLRC allows small and mid-sized companies to receive the most benefit for their limited training dollars.

> *"We need to get to know a company well if we are going to serve it well."*
>
> Paul Garza
> Business and Industry Services Center

Issues to Consider

As a service center, BISC is responsible to multiple clients, including Rancho Santiago Community College, the business community, its own internal service programs, and the general public. As a result, BISC has had some difficulty focusing its services and developing its sense of purpose.

Rancho Santiago College has different goals for BISC than did the city of Santa Ana. When Santa Ana managed BISC, the center's focus was on providing effective business incubators. With the integration of services under the college's management, some wondered whether all of the various constituent programs within BISC, particularly the incubator program, would receive the amount and type of support required for optimal performance.

The Business and Industry Services Center has been struggling to integrate the various programs and organizations that Rancho Santiago Community College placed on site in 1994. Initially there was no sense of a unified mission. Only with considerable time and effort have the center's programs begun to establish integrated approaches to business services, working together to create collaborative service plans for businesses, and make referrals to each other.

> *"Institutions block themselves from [working collaboratively]. They don't see ways of collaborating internally."*
>
> Paul Garza
> Business and Industry Services Center

During the process of developing a unified sense of mission there have been questions about how BISC programs represent themselves to the public. Some program staff say they represent BISC, while others say they represent Rancho Santiago Community College, the Small Business Development Center, or the Santa Ana economic development agency.

Rancho Santiago Community College has facilitated cooperation by institutionalizing many of its grants, not "walling" them off, but using them to bring together and improve an array of programs and services.

Provider institutions considering developing a center similar to BISC need to be imaginative in planning the center's design and available services. The BISC director emphasizes that there is much common ground among programs and providers. These commonalities need to be identified and highlighted for such a cooperative center to be successful.

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Regional Manufacturing Technology Center

Kellogg Community College provides individualized, self-paced, instructor-directed training in the industrial trades at its state-of-the art Regional Manufacturing Technology Center (RMTC) in Battle Creek, Michigan. The center is a successful partnership between private industry, state and local governments, and the community college to meet the corporate training and economic development needs of Battle Creek and its surrounding area (a 50-mile radius).

The Battle Creek region is home to a large number of manufacturing firms, many of which are related to the automotive industry. The region has been adding jobs since the early 1990s, after having experienced layoffs and downsizing in the late 1980s. The recent hiring trend, coupled with the move toward utilizing more advanced equipment, has brought about a shortage of skilled-trades people in the area. Very few people have completed apprenticeships or achieved journeyman status, and both are in increasing demand.

From its inception, the RMTC, and its precursor at Kellogg Community College, has concentrated on serving businesses' incumbent workers, but it also accepts students who are presently unemployed. The RMTC has served approximately 140 companies over its five years of operation. Currently there are 96 companies and over 1,200 students using the center's services. Of these 1,200 students, more than 1,000 are employees sent to the RMTC for company-arranged training. An additional 100 students are referred by agencies through programs such as the Job Training Partnership Act (JTPA), while the remaining 100 students are walk-ins.

Program Description

The RMTC provides training in industrial maintenance skilled trades, including electricity/electronics, machine tool/tool and die, millwright, pipe fitting, refrigeration/air conditioning, sheet metal, welding, instrumentation, and plastics. The center's mission is to train individuals for industrial applications, though many of the skills taught can be used for commercial repair and maintenance as well.

The RMTC has a modularized curriculum offering approximately 800 distinct skills to companies and their employees. Through this design, RMTC can work with companies to create customized training plans that include only those skills required for the companies' production processes. Companies then send their employees to the RMTC to study and learn the appropriate skill modules. Companies are charged only for actual skill attainment: the RMTC bills them for each skill acquired by each employee. The fee charged per skill is based on the average number of contact hours required to master that skill (billed at $3.41 per hour) plus lab fees, which vary depending on the module.

Students attending the RMTC may receive credit for prior experience and skills, and thus be exempted from portions of the company's training plan. Students who request such credit are interviewed by the appropriate instructor, who may review previous certifications, or have the students demonstrate their proficiency in the particular skills.

When students begin a training module they are given a training packet outlining the module's activities. While the RMTC has a strong, central belief in hands-on learning, modules may consist of a mix of learning activities, including reading texts, watching videos, and using computer-assisted instruction. Modules may take from a few hours to a few weeks to complete, at which time students take a written test or demonstrate their ability to perform a task.

Students determine on their own when they are ready to be tested. Most written tests are open book and open notes, and students can retest as necessary. Because learning at the RMTC is competency-based and sequential, in order to accomplish successive modules, previous modules must be mastered. So, not only can't students fail, they recognize that it pays to learn a skill well.

Flexible scheduling is one of the RMTC's strengths. The center is open four days a week, Monday through Thursday, from 8:00 a.m. to 9:00 p.m., for a total of 52 hours per week. The center provides services 47 weeks of the year, closing only for two weeks in the summer, two weeks during the winter holidays, and one week in the spring. Counting all the days that the RMTC is open on a drop-in basis along with those days the center is used for contract education training, the RMTC offers instruction about 225 days annually. During its hours of operation, instructors are always available to provide students with one-on-one instruction.

A Day in the Life. . .

By the time the doors open at 8:00 a.m., there are already a number of students waiting to start their day at the RMTC. Once registered, students punch in at the time clock in the resource center. If the skill module they will be working on that day requires any text reading, videos, or computer-assisted learning, the resource center staff will help locate the materials. When these learning activities are done, students move into the shop.

Ordinarily, instructors will start each module by demonstrating a particular skill, then allowing the students to practice. Until instructors are comfortable that students are able to work safely on their own with a module, they will stay close by to keep an eye on students' work. Otherwise, students work on their own until they have a question or want to demonstrate that they have mastered a skill. Once they master a particular skill, it is recorded for later reporting to the students' companies, and the students move on to the next skill module.

The physical layout of the RMTC also contributes to its success in training. There are few walls in the lab separating the skill areas. The result is an increased awareness of the growing inter-connectedness of the various skill areas, reinforcing for students that success on the job requires skills in many different fields.

Registration for training courses takes place on site at the RMTC, minimizing the number of trips students make between the RMTC and Kellogg Community College's main campus. All new students are assessed on their reading and math skills in order to determine if they are ready for the RMTC's curriculum. These assessments are conducted at the testing center on the college's main campus. Counseling for new registrants is available, from the center's director or one of the instructors, to assist students who have questions about academic matters.

Training at the RMTC is self paced, but not self taught. Instructors at the RMTC, who are all experienced journeymen, spend at least 30 hours per week on the floor with the students (as opposed to an average of only 15 hours of contact time between students and instructors at traditional institutions). Because the training is self paced, the instructors do not engage in traditional classroom teaching, but rather make themselves readily available to answer students' questions and demonstrate techniques. Frequently instructors remain at their desks, and wait for students to approach them, instead of checking up on the students. This gives students the space and the time to work through problems on their own before asking for assistance.

The full-time faculty are supplemented by part-time instructors, who also have journeyman status, and eight student teaching assistants. The assistants are generally self or agency referrals seeking financial assistance to complete their training goals. They typically do not provide instruction, but rather assist with setting up and maintaining equipment and preparing materials for student use.

The instructors report that working in an environment of self-paced learning and flexible training schedules places more requirements on them. They need to work closely with the center director and with companies to ensure that training content is current and effective. They must have broad knowledge about their skill areas in general, and be exceptionally well prepared, at all times, in a number of specific applications. They must be able to explain the basics in clear and respectful ways, and remain current with new technology, new manufacturing techniques, and new equipment.

Workforce Readiness Program

The RMTC offers a Workforce Readiness program consisting of 162 continuing hours of instruction and covering safety, shop math, reading gauges, and measurements.

The program helps companies screen potential new hires for commitment and basic work readiness skills. Companies generally use the program for secondary screening, after reviewing an individual's application and interviewing him or her. Companies often promise a job to the employment candidates if they finish the program and pass a drug test.

Companies may choose all or part of the Workforce Readiness curriculum, depending on their purposes. Eaton Corporation has sent over 150 people to the program, with about a 50 percent successful completion rate. Eaton offers from $11.00 to $13.00 per hour after six months on the job. Eaton saves money by not putting large amounts of resources into people who do not have the commitment or basic work readiness skills that are key indicators for job success.

The RMTC estimates that, on average, the training costs companies about $100 per individual who does not complete the full program, compared to $580 for one who does. Companies pay for the training, but generally do not pay wages to the individuals during the training period.

> *"I get up every morning looking forward to going to work. I come home every night knowing that I have accomplished something of value."*
>
> Jim Owens
> Instructional Manager, Electricity and Electronics

Instructors accomplish these tasks in a number of ways, including subscribing to periodicals, working closely with their area-specific advisory committees (see below), making frequent site visits to the companies with which they work, attending conferences and training workshops, visiting with vendors, and even working at companies using "cutting-edge" equipment during their two week break in the summer.

The RMTC's support staff collects information on attendance, student progress, and skill certification in order to send companies regular reports on their employees' status and generate bills for the skills attained by their employees. The RMTC also uses the data to periodically review the average amount of time students require to master the skills offered, and update its fee structure.

Results

American Fibrit, Inc., an automotive interior manufacturer, has established a continuous training course at the RMTC that it expects all of its maintenance personnel to work through. The company reports improvements in the areas of production, management, and employee attitudes, as well as cost savings, as a result of its relationship with the RMTC.

Fibrit's employees better understand how their equipment works, how to prevent mechanical failures, and how to perform repairs. The skills learned at the RMTC have allowed Fibrit employees to undertake more complex repairs, which represents a cost savings over using outside contractors. The employees who have gone through training pride themselves on demonstrating their new skills, troubleshooting problems, and working through a process in a logical sequence. These concurrent improvements in competence and self esteem have allowed the plant engineering manager to spend less time in supervision, and more time on long term projects.

> *"The impact of the RMTC's programs on our employees has been phenomenal. With the technology we have coming in, without the RMTC we'd be in trouble."*
>
> Fred Cini
> American Fibrit, Inc.

Eaton Corporation's Torque Control Products Division in Marshall, MI, has 60 or so people at the RMTC at any given time: ten working to upgrade their skills in general, 30 taking specific CNC training, and 20 in the RMTC's pre-employment Workforce Readiness Program. Because of the employee upgrade programs, Eaton's employees are generally more qualified and better prepared to work in a modern manufacturing environment. Eaton's extensive use of the RMTC's Workforce Readiness program has enabled it to hire people it knows have both skills and motivation, allowing the company to increase its production capacity without increasing its scrap rate.

> *"The RMTC functions faultlessly."*
>
> Stan Graves
> Eaton Corporation

Sixty percent of all Nippondenso's technical training is done at the RMTC, including apprenticeship training, cross training, and upgrade training. The training at the RMTC is inexpensive, convenient (registration takes just a phone call, and the training schedule covers all three shifts), and in an accessible location.

> *"The RMTC is customer focused. With the RMTC it is 'How can we help you?' and 'What can we do for you?'"*
>
> Herb Fricko
> Nippondenso Manufacturing U.S.A., Inc.

Nippondenso, the largest independent manufacturer of auto parts in the world, credits the training received at the RMTC with contributing to its improved working ratio (the amount of time equipment is available for use), up from around 85 to nearly 98 percent.

History

In 1979, Kellogg Community College received a Comprehensive Employment and Training Act (CETA) grant to provide job training services in welding, machine tools, and electronics, which were not then being provided by the college. In following years, the college added an apprenticeship program as well. The modularized curriculum and the open entry/open exit format were introduced in 1981.

In 1986, Nippondenso Manufacturing faced the decision of expanding its Battle Creek facility or building at a new location. An offer from the state of Michigan to support the construction of a training facility meeting Nippondenso's needs helped convince the company to remain in Battle Creek, and marked the beginnings of the RMTC. In 1989, the Kellogg Foundation provided $1 million to match the state's funding for the RMTC, and the entire $2 million was granted to the city of Battle Creek for the construction of the center. An additional $800,000 was raised through corporate donations to purchase required equipment.

During the planning stage for the RMTC, an advisory committee was established to conduct a survey of local companies, determine the business community's training needs, and establish a plan and vision for the center.

The RMTC has already gone through one expansion funded by local tax revenues earmarked for economic development ($350,000) and by the community college ($100,000). Corporations and vendors continue to donate new equipment, and the college sometimes uses Perkins funds to purchase other equipment.

The RMTC currently has an equipment inventory valued at approximately $2 million. Kellogg Community College leases the center from the City of Battle Creek for $1 per year as part of an agreement to provide training services required by local businesses. The college is scheduled to take ownership of the RMTC in the year 2000.

Battle Creek's economic development agency, Battle Creek Unlimited, serves as the official liaison between the city and the RMTC and the college. Battle Creek Unlimited also markets the RMTC's services, and uses the reputation and proven success of the RMTC as a powerful incentive to attract businesses to the community.

Kellogg Community College is trying to replicate the RMTC's success by encouraging some of its own academic departments to institute the instructional approaches used at the center. To date, this is occurring more through individual faculty members' efforts than through departmental efforts.

Structure

The RMTC has established a number of advisory committees to provide avenues for business involvement in managing the center. The main advisory committee for the RMTC is comprised primarily of human resource directors from a cross section of the companies served by the center. This committee focuses on issues such as scheduling, communications, reporting, billing, and general administration of the center.

Each of the nine skill areas within the RMTC also has an advisory committee, made up of content experts from companies, usually first-level supervisors, and a number of vendors and students. These nine committees advise on curriculum development and content, and methods for staying current with technological advancements. Each of the advisory committees meets formally twice per year, but is constantly active on an informal basis.

The RMTC employs one administrator, seven full-time instructors, 12 part-time instructors, three and three-fouths support staff, and eight student assistants. The operating budget of approximately $800,000 supports staff (78 percent); and physical plant, consumables and supplies, and marketing (22 percent).

Arranging Services

Often when a company approaches the RMTC with training needs, it is not exactly sure what it needs — just that it needs training. That's where the expertise of the RMTC comes in. First the director will sit down with the company's representatives, explain the history and the structure of the center, and provide a tour of the center. Then the director will begin the process of discerning the company's training needs and designing its customized training plan.

Over the years, the RMTC has developed a series of basic "training templates" for different occupations. The company reviews these templates in order to gain a general sense of what might be included in, for instance, a welding apprenticeship or a machine tools upgrading program. In most cases the director and/or the appropriate instructor then visit the company to view its equipment or procedures and determine what specific training is needed. Once the training is designed, the employees are registered with the center, and the training is ready to begin.

The RMTC aims to generate enough revenue from tuition to cover at least one-third of the total operating budget. Actual revenues from tuition have totaled between $350,000 and $400,000 each of the last four years. The remainder of the budget is covered by revenues from state and local taxes.

Keys to Success

Industry representatives and staff at the RMTC agree that its focus on customer service is what makes the center successful and a high value service for industrial training. The RMTC is flexible, convenient, and accessible. It is open to students from 8:00 a.m. until 9:00 p.m., four days each week, and almost year round. These hours permit employees from all shifts to attend training on or off the clock, as desired by employers.

> *"If a company is not happy with the training, fine, we'll redo it, no cost, as acceptable and convenient for [them]."*
>
> Paul Ohm, President
> Kellogg Community College

The center's open entry/open exit system, as well as its uncomplicated registration procedures, allow companies immediate access to training as the need arises. Companies can start training programs any time of the year, and arrange training schedules for employees according to the production and work schedules at their plants. Employers highlight the RMTC's willingness to adjust components of its program to meet its customers' needs.

Eaton Corporation required computerized numerical control (CNC) training on equipment that the RMTC did not own. Eaton agreed to purchase one half the necessary equipment for the RMTC so that training could be created and provided at a rate that would be financially feasible for Eaton, as well as for other companies requiring the same training.

The RMTC's modularized curriculum allows companies to have training customized to both their own and their employees' specific skill needs. The director and instructors at the RMTC tour a company's production area, meet with company managers, and review company equipment in order to help design the optimal training plan for each company.

After formal math and reading testing, all students are informally assessed to determine their level of work related skills. Students only receive training on the skills they lack, and companies only pay for those skills students attain. Students may receive credit for prior experiential learning, and all credits can be used toward a college certification or an associate's degree.

The RMTC has built strong business partnerships into every aspect of its operation. Companies participate on advisory committees, help to determine curriculum and training, make donations of money and equipment, and assist with long-term planning for the center. Businesses that use the center feel a sense of ownership of the RMTC. Support from the top administration at the college has given the RMTC the freedom to respond to business needs.

If a company requires training that the RMTC doesn't offer, the center provides two options. First, where the RMTC feels such training should be added to its offerings, the center can obtain the necessary equipment and design an appropriate module. Second, for training that falls outside of the RMTC's scope, the college's contract training services, which are housed at the RMTC, can design and deliver individualized company training.

The RMTC's instructors come from industrial backgrounds and have extensive experience in their fields, which brings tremendous value to the center's services. Instructors continually seek ways to customize their training. For instance, tool and die instructors frequently use plans and materials from students' workplaces. Instructors also individualize instruction and try different teaching approaches until students have successfully mastered needed skills. Their interpersonal skills allow them to work effectively with students from different backgrounds and at different skill levels, as well as with engineers and supervisors from companies.

Instructors are able to spend more time on the shop floor with their students and staying current in their field in large part because they are not responsible for administrative duties. The separation of duties among the RMTC staff allows the instructors to concentrate their time on their training responsibilities, and thus to keep the quality of training at a high level.

The quality of training is also kept high because students at the RMTC begin working on state-of-the-art equipment right from the start. The RMTC's flexible scheduling and year-round training enables it to purchase fewer pieces of equipment but use them more consistently. Instead of needing 25 lathes for a class of 25 students, the RMTC only needs, perhaps, six lathes. This helps reduce the amount of money the center has to spend on such equipment.

And finally, the RMTC is successful because the center is located in an industrial park and not on a college campus separated from the businesses it serves. The off-campus location makes the RMTC more accessible to companies and their employees, and makes it more of a business center than an education institution.

Issues to Consider

There is no way to regulate the flow of students using the center. Because students attend when their personal schedules permit, there are occasionally very crowded days, especially during the winter months. When the RMTC is crowded, students may have less individual time with instructors and less or no time on the equipment, may have to move to different modules than those for which they are scheduled, or may, perhaps, have to come back another day. Both instructors and students mentioned that one of the most critical issues in keeping the RMTC's program successful is maintaining a low student/teacher ratio.

> *"This is not inexpensive. The most inexpensive way to train, putting one instructor in front of 30 people, doesn't work for what we do. We provide excellent value for the companies that require the most training for their money."*
>
> Paul Ohm, President
> Kellogg Community College

Some students may not receive adequate attention from the instructors. The center's policy of allowing students to work at their own pace means that instructors are not always checking on the students. Some students may be too shy to approach the instructors, and may not get all of the instruction they need.

Students with low basic skills cannot attend the RMTC. To comprehend the RMTC's instruction, students must be algebra ready and able to read at the eighth grade level. The RMTC refers those students who do not possess basic math and English skills to community remedial instruction services.

The RMTC's instructors do not work under a traditional community college contract. The RMTC's instructors have extensive industry experience, and are expected to have more contact time with students than other college faculty. Due to these and other differences, the RMTC's instructors work under a separate contract agreement than that negotiated with the faculty on the main campus.

Finally, meeting the record keeping needs of customer clients is time consuming. The RMTC must track attendance and skill attainment for students, and be prepared to report such information to companies at their convenience, both on schedule and on demand.

Successful replication of the RMTC's model in new communities requires a full commitment from the local business community and the training institution. While the RMTC does sell its modules, at cost, to interested providers, it stresses that a provider can't just transport the program by buying the modules – the provider's community has to have the right foundation and the right environment into which to introduce the modules. For instance, a provider must have a long standing working relationship with the local business community, and the community must have an employment base that requires constant and increasing training in the skilled trades, or whatever field the provider is pursuing.

The RMTC model may not be appropriate in all settings. Larger community colleges, for example, may not need to replicate this model, as their ability to offer multiple classes at a variety of hours provides a great deal of the flexibility that is the keystone of the RMTC model.

The provider must be willing and able to introduce a modularized curriculum and an instructional schedule emphasizing an increased number of contact hours with students, and to use instructors with extensive experience in their field of expertise, but not necessarily in the classroom. In short, for the RMTC model to work, all parties involved must have the commitment to "go all the way."

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California Community College Workplace Education Program

The ten Workplace Learning Resource Centers of the California community college system have developed a plan for including customized computer-based training as one of their offerings to business, and for training faculty to create computer-based lessons. Under this plan, faculty will develop computer-based training modules for businesses, and make the modules available through a central library for other community colleges to adapt for use in workplace training programs in their own communities.

The project, which is funded through a grant from the state of California, has selected ExpressTrain™, a template-based multimedia authoring software package developed by Princeton Center, to serve as the base for the system. ExpressTrain, and other template-driven computer learning packages, drastically reduces the time and programming expertise required to develop computer-based training modules. With ExpressTrain, a 30-minute lesson requires about 40 hours to develop, as compared to about 500 hours using other software packages. This reduction in development time and cost makes using authoring software for small and mid-sized companies a practical alternative. Once participating community colleges are able to share the various workplace education modules they create, even more time and expense will be saved in the development process.

The San Diego Community College District (SDCCD) is the lead institution in this statewide project, and is responsible for developing and initiating ExpressTrain training for the remainder of the community colleges in California. The SDCCD is the first community college in the grant project to have provided ExpressTrain-based training to companies. Accordingly, this case study concentrates primarily on the San Diego Community College District's experience in using ExpressTrain in its workplace education services, while providing an overview of the California community colleges' plans.

Program Description

The San Diego Community College District (SDCCD) has a long and successful history of providing customized workplace and workforce training. It developed its ability to offer computer-based instruction in an effort to expand its service options and increase its capacity to provide assistance to small and mid-sized businesses. Currently, the SDCCD includes ExpressTrain instructional modules as one on a list of options available to companies that contract for workplace training services.

> “*ExpressTrain simplifies the curriculum design and the inclusion of a variety of media.*”
>
> Marian Thacher
> San Diego Community College District

ExpressTrain, developed by Princeton Center of Pennington, NJ, is a program designed to create multimedia training. ExpressTrain features pre-designed instructional events that are easily customized for specific training contexts. Authoring programs like ExpressTrain are intended to make it possible for people with limited computer experience or expertise to develop interactive, multimedia training.

ExpressTrain includes model templates for teaching various types of information, such as procedures and concepts. All models are specific to the desired learning outcome and provide guidelines for generalized computer-based training components. ExpressTrain provides guidance for the following general components: introductions and pre-instructional strategies, presentation of information and guided learning, practice items and review, and post-instruction activities. ExpressTrain also includes a course manager for training delivery and tracking learner progress.

While computer-based lessons could feasibly stand alone, the SDCCD recommends that the modules be one component of a larger training program. ExpressTrain's developer recommends, and the SDCCD's experience confirms, that modules should be limited to 20 to 30 minutes in duration, and each module should focus on one specific topic. Modules that last too long or attempt to introduce too much material lose their effectiveness.

If a company decides that it would like to use computer-based instruction as part of its contract training, the college's curriculum developer would work with the company to determine its training needs and goals and develop the training program. Because the curriculum developer is usually not a content expert on all the training companies require, the company would be asked to identify an internal content expert to help the curriculum developer prepare the training modules.

The company would be asked to provide a list of topics and information to be covered in the training. The college's curriculum developer would then write a preliminary script for the modules, complete with an outline of what media items would be used to support the training objectives. After the company reviewed this script, the curriculum developer and the company would meet to finalize the content. The curriculum developer would then collect the necessary video and audio segments, and produce the computer-based training module. The module would be tested with a few employees, changes would be made as necessary, and a final product would be delivered.

The college's curriculum developer would train a company representative to use the ExpressTrain program so that on-site support would be available to employees. The phone number to the college's workplace learning resource center would also be posted next to the computers at the company workplace so that employees could call the college's curriculum developer or other staff for assistance.

ExpressTrain Includes Options for Using 13 unique Instructional Design Components:

- Introduction
- Objectives
- Motivation
- Readiness Check
- Pretest
- Presentation of Information
- Guided Learning
- Practice Sets
- Review
- Post Test
- Performance Summary
- Review of Content
- Bridge to Other Lessons

Safety Training at Teal Electronics

TEAL Electronics has established a cross-functional team of 12 staff members to address safety issues within the company. This team is responsible for conducting training, monitoring compliance with California Occupational Safety and Health Administration regulations, and troubleshooting safety hazards.

This cross-functional safety team chose to use ExpressTrain modules introducing material safety data sheets as a supplement to its group safety training classes that all new employees take. This allows TEAL to use a multi-modal approach to safety training, and also allows individual employees to use the ExpressTrain modules as refresher training as required.

The SDCCD strongly recommends that companies using their contract education services, and especially those using computer-based training modules, establish a learning center where employees can work on their educational development in a quiet, private environment.

The SDCCD estimates that ExpressTrain modules will cost between $4,500 and $10,000, depending on whether the college is asked to perform extensive needs analyses, the amount of support services requested, and the degree of customization required.

As more community colleges in California develop ExpressTrain modules for workplace education, a "library" of these modules will be established. Curriculum developers using ExpressTrain will be able to use existing modules as foundations for re-customization for new companies. The San Diego Community College curriculum developer estimates that, on average, about one half of each module will be generic enough to an industry or occupation that it can remain in place in adapted versions. This reduction in the amount of customization required will result in cost reductions and benefits for small and mid-sized companies.

Results

TEAL Electronics Corporation currently has about 100 full time employees. The company produces power conditioning units that regulate and smooth the flow of power to sensitive production and testing equipment.

As an extension of previous workplace communication classes, two ExpressTrain modules have been created for use at TEAL. The first, which all TEAL employees must complete, is a general introduction to material safety data sheets in the workplace – what they are, why and when they are used, and where they are kept. The second module is designed for those employees who use a particular varnish in a production process.

These two modules are part of the general safety training provided to all TEAL employees. During this general training, the company's safety officer conducts an initial safety training workshop for all new employees, and follows it up with a general orientation to the company's learning center, which houses the computers used for the ExpressTrain modules. Once the employees are comfortable using the learning center, they are expected to complete the ExpressTrain modules on their own. The company provides each employee with four to six hours per week to use for quality improvement activities, including work-related education and training. During these times TEAL employees may use the learning lab to complete or review the company's safety training modules.

> *"The employees are very excited about using the ExpressTrain modules. Using voices and pictures of TEAL employees really engages the students, unlike some traditional computer-based training."*
>
> Mary Schwalen
> TEAL Electronics

Evaluation of the ExpressTrain modules is gathered through feedback sheets that employees fill out after completing a module, as well as through informal conversations with employees by TEAL managers and the college's staff. The feedback has been extremely positive. In fact, TEAL is so pleased with the ExpressTrain safety training modules that the company is considering additional ways to use ExpressTrain in its new employee orientation and quality training efforts.

History

The California Community College system awarded a state distance learning grant to the San Diego Community College District

Workplace Learning Resource Center in 1994. This one-year, renewable grant to train faculty to develop interactive computer-based training modules is in its second year, which is due to expire on June 30, 1996. The SDCCD does not expect to receive a third year extension on the grant. It is anticipated that the community colleges will replace the grant funds with revenues generated by using ExpressTrain in contract education.

Sony Corporation uses ExpressTrain modules developed by the San Diego Community College District as an introduction to part of its internal training programs.

As the lead community college, San Diego has been responsible for providing "train-the-trainer" training to five other community colleges:

- American River Community College, Sacramento, CA
- Oxnard Community College, Oxnard, CA
- El Camino Community College, Torrance, CA
- College of the Desert, Palm Desert, CA
- Fullerton Community College, Fullerton, CA

The SDCCD and each of the five colleges in the initial training group were then responsible for providing three training sessions to faculty from colleges in their local area. As of June, 1995 (the end of the first year), a total of 127 faculty members from 24 community colleges were trained to use ExpressTrain. The second year's activities will include refresher training for the 127 faculty members and further training of new faculty members from new community colleges.

To date, only the San Diego Community College District has provided ExpressTrain-based training to companies. Other community colleges in the state plan to begin offering ExpressTrain modules as part of their contract education by the spring of 1996.

ExpressTrain requires approximately 40 hours of development time for a 30 minute training module including customized audio and video.

Structure

The SDCCD Workplace Learning Resource Center reports to an Associate Dean and the Provost of Continuing Education, and delivers contract training services to businesses through the SDCCD Auxiliary Organization's Employee Training Institute.

The Workplace Learning Resource Center has four staff members: the director, the distance learning project coordinator, a contract specialist, and a secretary. The director is responsible for marketing contract education to

Minimum Computer System Requirements

To Run a Lesson:

- A run time version of ExpressTrain
- 386 PC or higher (486 recommended)
- 4 MB RAM
- Soundcard and speakers or headphones
- Video driver (Video for Windows)
- 256K color graphics board
- 640 x 480 monitor

To Develop a Lesson (low end):

- 486 PC with 66 MHZ processor
- 8 MB RAM
- 120 MB hard drive
- VGA color monitor
- Mouse
- DOS 6.0 and Windows 3.1
- ExpressTrain
- PaintShop Pro, Windows Paintbrush

To Develop a Lesson (high end):

- 12 MB RAM
- 1 gigabyte hard drive
- Color scanner
- Audiocard, microphone, and speakers
- Video capture card
- CD-ROM drive
- High-end graphics software
- Video and audio editing software (i.e., SoundBlaster or Premiere)

the business community, networking with other workplace education providers, and interfacing with the SDCCD. The distance learning project coordinator is responsible for computer-based training development for workplace education and for overseeing the ExpressTrain training for state community colleges.

The SDCCD's Workplace Learning Resource Center received a distance learning grant, in the amount of $100,000 for each of two years, to operate the computer-based workplace education project. This grant covers the salary of the project coordinator, who works 24 hours per week on the ExpressTrain distance learning project, the costs of training faculty at participating community colleges, and the purchase of some software and hardware to support ExpressTrain module development.

The SDCCD markets its workplace education services, including ExpressTrain, by mailing brochures to companies, purchasing print advertisements, and listing its services in the community college course catalogs. These techniques have produced some new clients, but the best public relations and marketing has been from satisfied clients.

Keys to Success

By giving curriculum developers the ability to create computer-based training modules without the need for costly computer programmers, template authoring programs save money, ensure that content issues drive design, and permit faster and more frequent updating of training modules as workplace environments change.

The staff at the SDCCD's Workplace Learning Resource Center has extensive experience providing contract education to businesses. This level of experience allows the staff to make the best use of ExpressTrain within a larger training plan designed for the company. Further, the staff understands the need to provide extensive support and training for employees as they begin to use computerized training modules.

The ease with which ExpressTrain, and other authorware, can be customized allows the San Diego Community College District to provide services to small and mid-sized companies. The creation of a library for all ExpressTrain modules will further reduce development time, and therefore costs to companies for customized training.

Issues to Consider

Computer-based training, even if using more cost-effective applications such as ExpressTrain, can still be rather costly. For example, the cost of the development version of ExpressTrain, with which training modules are created, is approximately $2,000 for companies, and $1,500 for educational institutions. The purchase of computer hardware needed to either develop or use the modules (see box on the previous page) would add additional costs.

In order to gain the proficiency necessary to use ExpressTrain to its fullest potential, the SDCCD contracted with Princeton Center for training in using ExpressTrain, which cost $7,500. The SDCCD also invested a full year of staff time to developing the technical expertise to use ExpressTrain.

Statewide Library of Workplace Training Modules

The California community college system plans to establish a state-wide library of all the ExpressTrain workplace training modules, which can be applied to a wide variety of companies and industries. Marian Thacher, ExpressTrain project coordinator and curriculum developer with the San Diego Community College District, estimates that only about 50 percent of most modules would need to be newly customized for companies. Having access to modules with a transferrable core of information would increase the cost-efficiency of using authoring software.

While a library of previously created modules will help reduce costs, creating such a library may be complicated by copyright laws and businesses' concerns about proprietary information. Providers and businesses will need to develop agreements over ownership and use of the modules.

Users of some authoring software have expressed some dismay regarding the quality of the documentation that accompanies the software. Phone support, however, has generally proven to be very helpful and responsive.

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One-Page Summaries

Many of the real-world examples of the five delivery strategies actually employ a *combination* of strategies. Some of the learning consortia have service centers or use computer-based training. Some walk-in centers offer computer-based training. Distance learning programs are frequently broadcast to what are at least *informal* learning consortia – groups of companies that various providers (e.g., community colleges, manufacturing technology centers, chambers of commerce) have brought together for a shared learning experience. Faced with this overlap, this section categorizes the examples by what seem to be their most predominant characteristics.

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Learning Consortia - Training

Consortium for Supplier Training

Program Highlights

Date of Inception:	1992
Number Served:	Over 200 companies and 12,000 individuals in 1995
Size of Companies:	From one to two, up to several thousand employees; targeted at companies with under 500 employees
Type of Companies:	All
Evaluations:	Customers gave high ratings to the training, with a 96% satisfaction rate
Costs:	Companies participating pay approximately $75 to $200 per day per person in a course

The Consortium for Supplier Training was established in late 1992 by a handful of quality-focused, global companies headquartered in North America to provide *a world-class training system that accelerates supplier learning and improves performance.* To achieve their mission, Consortium members compiled an initial 11 training courses in Total Quality which are made available to their suppliers and other companies through a network of member-sponsored supplier training centers (STCs).

The Consortium consists of six full member companies: Bayer Corporation, Chrysler Corporation, Eastman Kodak Company, Motorola, Texas Instruments, and Xerox Corporation. Seven STCs (community colleges, universities, or technical schools with active industrial outreach programs) deliver the Consortium's training: Dallas County Community College District (TX), Duquesne University (PA), Finger Lakes Community College (NY), Mesa Community College (AZ), Monroe Community College (NY), Northern Essex Community College (MA), and Oakland Community College (MI).

The Consortium for Supplier Training provides services to the supplier training centers, which in turn provide training to members' supplier companies, as well as to others that want to enroll in the training. The services the Consortium provides to the STCs include: 1) access to high-quality, business-certified courses; 2) training of faculty on the Consortium's quality courses; 3) marketing of the Consortium courses to members' suppliers; and 4) evaluation of the Consortium's quality courses in order to bring the "best of the best" training into the Consortium.

The Consortium/STC relationship benefits small and mid-sized companies by: 1) reducing the number of separate, customer quality training programs in which they have to participate because the large-company customers have agreed on a single, common training program; 2) having the training/course *development costs* borne by Consortium member companies; and 3) enabling the smaller companies to share the costs of training *delivery* with other businesses and individuals participating in the training.

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JobLink

Program Highlights

Date of Inception: Grant awarded January, 1995
Number Served: Nine companies
Size of Companies: 50 to over 1,000 employees
Type of Companies: Manufacturing
Evaluations: None
Costs: Grant amount $1 million per year

Coast Community College District's JobLink program uses a U.S. Department of Education (ED) Workplace Literacy grant to provide training services to a partnership of nine companies, along with other manufacturing companies, in Orange County. The program, which is still under development, will include drop-in services at a learning lab, work-site training, and assistance to help companies set up programs supporting employee learning.

The learning lab will be located on site at the only large company in the consortium, and students from all member companies will be encouraged to drop in anytime during operating hours. The lab, which will be equipped with computers and staffed with teachers, tutors, and volunteers, will offer a variety of learning activities to students, including group learning, one-on-one instruction, and self-led instruction (computer work, reading, and writing).

Learning at the lab will be individualized. When they enter the lab, students will receive a workplan for that day, tailored to their learning needs, their prior lab work, and the group activities and learning opportunities scheduled for the day.

JobLink's work-site training will focus on building and supporting self-directed teams within each company. The program expects to develop 15 nine-hour modules, to be delivered in 1 ½ hour segments over three to six weeks. The first three modules are likely to be: 1) learning strategies and learning how to learn, 2) how to participate on a team, and 3) pre-statistical process control.

Finally, JobLink will help companies promote continuous learning among their employees, by helping them set up libraries, mentoring/tutoring programs, book clubs, and other activities.

JobLink will customize its services to participating companies by using templates in both the lab and the work-site modules. These templates will allow the learners to interact with the lessons and to provide information and materials specific to their companies for each lesson.

Costs for JobLink will be entirely covered by the ED grant during its three-year duration. Once the grant period ends, JobLink could either charge companies $125 per hour for its services, or create a for-credit system which would allow students to apply for tuition reimbursement through their companies.

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Lancaster Industrial Training Consortium

Program Highlights

Date of Inception:	1991
Number Served:	17 companies and six education providers
Size of Companies:	From less than 50 to 1,200 employees; the majority have 200 to 250 employees
Type of Companies:	Manufacturing companies
Evaluations:	Planned for next year
Costs:	$250 annual membership fee for companies, will increase in 1996

The Lancaster Industrial Training Consortium was started in 1991 by six companies and the Lancaster County Vocational Technical Schools to promote peer exchange and enable manufacturers to share the costs of training on common workforce development needs. The Consortium, now with 17 companies and six educational providers, conducts needs assessments, provides courses open to all Consortium member companies, delivers customized training classes, facilitates a process through which Consortium members can share existing training programs, and provides follow-up consulting services to member companies.

A Consortium committee developed eight basic skills courses designed to make individuals "employment ready." The Consortium's education providers offer these classes, at the cost of delivery, to: 1) workers from member companies, 2) company-sponsored dislocated workers, and 3) individuals supported by public training programs. By expanding access to these courses beyond its membership, the Consortium not only provides basic skills training for its current workforce, it also ensures the development of a qualified workforce for future years.

Most of the Consortium's shared training activity comes in the form of large companies opening available spaces in their internal training workshops to employees from small companies. This activity has been so successful that many large companies in the Consortium now consult the small firms when setting their training schedules. Both large and small companies have benefited from sharing training. Fees paid by the small companies have defrayed training costs for the large companies, while still being less than the small companies would have had to pay to purchase such training on their own.

A state grant covers the Consortium's administrative costs, including the director's salary, and subsidizes other services, such as needs assessments and follow-up services to companies. The Consortium's education providers try to underwrite the costs of some of the training, and the Consortium's director helps member companies to acquire other training subsidies, such as state funds for customized on-the-job training.

The Consortium plans to evaluate its program in the coming year, analyzing whether the concepts taught in training have been transferred into the worksite, and helping companies to calculate their rate of return on training.

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Massachusetts High Performance Manufacturing Consortium

Program Highlights

Date of Inception:	January, 1994
Number Served:	13 companies
Size of Companies:	50 to 500 employees
Type of Companies:	Manufacturing
Evaluations:	None to date
Costs:	A grant of over $100,000 currently covers all costs of the Consortium, except for monthly on-line fees for the computer network

The Massachusetts High Performance Manufacturing Consortium, which is comprised of 13 manufacturing firms (nine core, and four periodic), seeks to enhance the quality and efficiency of members' workforce development efforts, and to link these efforts to the firms' competitiveness. The Consortium is supported by the Bay State Skills Corporation (BSSC) in Massachusetts and the U.S. Department of Labor (DOL).

Currently, two consultants serve as co-leaders for the Consortium, providing member companies with support and consulting services, conducting training sessions on topics of interest to multiple firms, and encouraging members to open their own internal training to other member companies. For member companies with very specific workforce training interests, the program leaders organize special working groups to research the topics and bring information and recommendations back to the larger Consortium membership.

As the Consortium was starting up, the leaders met with the CEOs, presidents, and vice presidents of member companies to determine the specific training needs within each company, as well as the companies' strengths in workplace training and education. In the spring of 1995, the Consortium held a mini-conference at which companies with identified expertise in a particular area led workshops on topics identified as important by the member companies.

The Consortium leaders are now working with teams at each company to help them reach a self-specified goal within eight weeks. A second mini-conference, planned for the fall of 1995, was built around these team efforts, providing team members an opportunity to share what they did and the lessons they learned from the process.

BSSC and the program leaders are now trying to strengthen the Consortium. The leaders are working with members to set new and expanded goals for the Consortium, including joint marketing efforts, and are helping to establish on-line services to connect each of the Consortium members and coordinate the Consortium's monthly meetings.

BSSC actively seeks the involvement of top management from each member company in all Consortium events in order to gain their support for the Consortium's continuation. Since renewal of the DOL grant is uncertain, the Consortium is working to secure other financial support.

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Massachusetts Workplace Literacy Consortium

Program Highlights

Date of Inception: October, 1994
Number Served: 27 companies
Size of Companies: All sizes
Type of Companies: Health care and manufacturing
Evaluations: None to date
Costs: A federal grant of $3 million covers 40% of all costs for basic skills training; any follow-up or specialized training desired by a company is on a contract basis with a provider

The Massachusetts Department of Education, with funding from a three-year U.S. Department of Education National Workplace Literacy grant, has established the Massachusetts Workplace Literacy Consortium: eight local partnerships charged with fully integrating the planning, implementation, evaluation and institutionalization of workplace literacy programs at 27 large and small businesses. Each partnership includes an education provider, which is working with labor and/or business organizations to deliver basic education services at the worksite.

The education providers are represented by project coordinators, who administer a partnership's activities and organize its governing body. These local "Planning and Evaluation Teams," composed of representatives from management, labor (if applicable), education, and participating workers, define workplace needs, shape curricula, and evaluate their own efforts. This team-based approach to programming builds the capacity of the local partnerships to institutionalize the workplace education programs at the end of the funding period.

In addition to classroom instruction, the grant supports workplace basic skills instruction through PictureTel video conferencing technology, and teacher training through the System for Adult Basic Education Support (SABES) and the satellite network for the Massachusetts Corporation for Educational Telecommunications (MCET).

The local governance structure is mirrored at the state level. The Consortium Planning and Evaluation Team, comprised of the eight project coordinators, state-level coordinators, and two SABES liaisons, serves as the Consortium's governing body and supports individual partnerships in the following areas:

- Development, implementation, evaluation, and institutionalization of programs,
- Staff training, curriculum development, and evaluation approaches,
- Brokering services from experienced practitioners in the field, and
- Improving worker performance in jobs in key industries.

The grant will serve over 1,200 participants during each year of workplace literacy instruction. Over the grant period, partners contribute over five and a half million dollars cash and in-kind match, including employee release and donated staff time, and contributions to direct costs.

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Learning Consortia - ISO 9000

Center for International Standards & Quality

Program Highlights

Date of Inception:	July, 1994
Number Served:	31 companies
Size of Companies:	Below 500 employees
Type of Companies:	Open to all companies
Evaluations:	Evaluations of individual training sessions have been above average
Costs:	$9,950 per company

The Center for International Standards & Quality's (CISQ) ISO 9000 Implementation Program is a ten to 12 month program – including group training sessions, an on-site audit of companies' existing quality/business systems, individualized support and assistance for each participating company, and a pre-assessment audit – to help companies prepare the quality assurance documentation they need to become ISO-certified.

Staff from CISQ and the Georgia Manufacturing Extension Alliance, the manufacturing extension program in Georgia, provide monthly, sequenced training workshops during the first nine months of the program. This training uses a combination of lecture, hands-on, and interactive instructional techniques to teach participants about ISO 9000 and how to prepare documentation and conduct internal auditing. The program also trains company supervisors and facilitators to share what they've learned with fellow employees.

At the start of the ISO Implementation Program, CISQ conducts an on-site, day-long audit of each companies' existing quality/business systems, and assigns each company a coach. The audit helps companies focus their ISO 9000 efforts on existing shortcomings. The coaches, who are staff members at the Economic Development Institute, CISQ's parent organization within the Georgia Institute of Technology, have expertise in ISO implementation in their assigned company's industry. They provide five days of no-cost, on-site assistance, and unlimited phone support throughout the program. Companies can purchase additional on-site support, beyond the initial five days.

Once each company feels ready, CISQ conducts a thorough evaluation of its new system, and prepares a written non-conformance report. CISQ's staff then helps it plan how to address any remaining shortcomings. CISQ guarantees that at the end of the program, companies will have a quality manual acceptable to an ISO 9000 registrar.

CISQ starts two ISO 9000 Implementation Programs each year – one in January and one in July. Each Implementation Program is designed for ten companies, and companies are enrolled on a first-come, first-served basis. CISQ markets the Implementation Program through direct mail, newspaper advertising, and brochures placed in its 18 offices statewide.

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ETI

Program Highlights

Date of Inception:	First ISO 9000 consortium in 1994
Number Served:	28 companies (in ISO consortia)
Size of Companies:	30 to 125 employees
Type of Companies:	Diverse, mostly manufacturing
Evaluations:	Training session evaluations, mostly positive; by the end of 1995, 80% of companies from the first consortium are nearly ready for ISO 9000 registration
Costs:	Approximately $12,000 to $15,000 per company

ETI's ISO 9000 program includes 26 days of group training sessions and ten days of individualized, on-site company support. A typical training session includes a presentation on an ISO topic, another presentation by an ISO 9000 registrar, small-group discussions on the day's topic, general sharing and networking time, and individual consultations with the trainers.

Individualized, on-site support is provided by ETI project managers assigned to each consortium member. The project managers conduct initial baseline assessments, and oversee their companies' training. If a company requires assistance outside the expertise of its project manager, another ETI consultant is made available.

ETI's ISO 9000 consortia have eight to 12 company members, and meet over an 18-month period, though companies can participate for less time. ETI offers smaller companies (fewer than 30 employees) the opportunity to join "mini-networks," which take less time and cost less money.

ETI is now working with its fourth ISO 9000 consortium. Experience has shown that larger companies need more individualized attention. It has also shown that, because companies are more willing to share internal information with non-competing firms, groups composed of diverse companies are more effective.

ETI consortium services are less costly than one-on-one ISO 9000 consulting services for two reasons: 1) companies share the costs of the group training activities (for an estimated 38 percent reduction in cost per company), and 2) the guaranteed 18-month service contracts allow ETI to discount its prices.

ETI periodically meets with consortium member CEOs for informal evaluations, which it uses to adjust individual training plans. ETI also guarantees its services. It will help a consortium member correct any major non-conformance found during a final ISO 9000 audit as long as the company 1) attended all group training sessions, 2) completed all classroom assignments, and 3) completed mutually agreed upon client actions assigned at the end of each site visit.

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Maryland Center for Quality and Productivity

Program Highlights

Date of Inception:	Pilot started in November, 1993
Number Served:	89 companies
Size of Companies:	80% have under 250 employees, with the average company having 122 employees
Type of Companies:	Very diverse, including electronic, printing, general manufacturing, software, and medical
Evaluations:	Informal evaluation of the ISO training and the consortium model were favorable
Costs:	Companies pay $1,500 for general membership, and additional costs for any outside training workshops

The Maryland Center for Quality and Productivity leads its ISO 9000 consortium members through 54 events (e.g., meetings, training, plan development) designed to actively engage them in building their own ISO-compliant systems. Fifteen of these events are provided in a group setting, 37 are conducted individually with each company, and two events are optional.

Companies spend the first seven months of the Center's 16-month program acquiring knowledge and developing a detailed plan for implementing the ISO standards. During the last nine months of participation, the Maryland Center introduces companies to best practices for each ISO standard and helps consortium members tailor their own ISO systems.

Consortium meetings are generally held once every four to five weeks. Presentations on ISO standards are made by the staff of the Maryland Center, companies that have experience with the ISO 9000 standards, registrars, and an occasional outside consultant.

The Maryland Center provides phone support, individual consultations at consortium meetings, and follow-up site visits as time permits and as requested by member companies. After the first seven months of the program, companies are able to set their own pace in the program. Some companies complete the program in as little as 12 months, while others continue to work beyond the program's 16 months.

The Maryland Center is currently running three consortia, with memberships ranging from 21 to 26 companies. To augment its ISO 9000 program, the Maryland Center uses industry sub-groups, which meet periodically to cover ISO standards particular to a specific industry.

The Maryland Center establishes new ISO 9000 consortia by inviting existing organizations with established business constituencies – such as community colleges and small business development centers – to be sponsors. This sponsorship model frees the Maryland Center from being directly responsible for recruiting consortia participants, and gives sponsors the opportunity to provide new services to their business customers.

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NEPIRC ISO 9000 Network

Program Highlights

Date of Inception:	Planning in April, 1992; first ISO training in September, 1992
Number Served:	34 companies in three ISO networks
Size of Companies:	Fewer than 500 employees
Type of Companies:	General manufacturing (SICs 20 - 39)
Evaluations:	Each ISO training session is evaluated, and ratings have been increasingly favorable; 58% of the companies trying for registration have succeeded
Costs:	Approximately $8,900 to $12,000 per company, depending on the number of participating companies in the ISO Networks

Northeast Pennsylvania Industrial Resource Center's (NEPIRC) ISO 9000 training program lasts 18 months and includes monthly meetings (15), a baseline assessment (two days), a management overview meeting, an employee overview (one day), auditor training (seven days), management status meetings (three), one-on-one consulting (five days), and a document review (two days).

NEPIRC's ISO training format was originally designed in partnership with local manufacturing firms. The monthly meetings start with a formal presentation on an element of the ISO standard by one of the four NEPIRC staff that are Registrar Accreditation Board (RAB) certified quality system auditors. To highlight ISO best practices, a prior NEPIRC ISO 9000 Network member company with an exceptional model of an element of the ISO standard being discussed at that monthly meeting is invited to make a presentation. Also, ISO registrars are invited to make presentations about their services, which helps the member companies choose a registrar with whom to work after NEPIRC's training.

Individualized company assistance is provided through the five days of on-site, one-on-one consulting, as well as in the afternoons of the monthly meetings, when NEPIRC staff are available for informal follow-ups and break-out sessions with company representatives. The staff at NEPIRC keeps each company on schedule to meet required ISO standards according to the company's own established timeline.

NEPIRC has been able to make its ISO Network cost effective by conducting as much group training as possible and holding the group training at a local utility's facility at no cost for the meeting room. At this point NEPIRC has a fixed cost for services to each ISO consortium, so the price charged to a company depends on how many companies sign up.

If a company completes NEPIRC's ISO training and is not successful in its bid for registration, NEPIRC will honor any unused one-on-one consulting days to help that company become successfully registered.

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Learning Consortia - Quality

Harford Quality Network

Program Highlights

Date of Inception:	January, 1994, after five months of initial planning
Number Served:	22 organizations
Size of Companies:	Between 50 and 500 employees
Type of Companies:	Open to all companies
Evaluations:	Training session evaluations have been favorable; no formal evaluation of the Network has been conducted
Costs:	Membership fees of $300 to $500, depending on the number of employees; additional training is provided to members at discounted group rates

Harford Community College's Quality Network serves 22 organizations, including 16 private companies, and six not-for-profits and government agencies. The Network features monthly breakfast meetings for member organization CEOs and top management, and training sessions and teleconferences for up to eight employees per participating organization. Topics presented at the monthly breakfast meetings and the training sessions are chosen by the members. Past topics have included the role of the supervisor in a TQM environment, process improvement teams, ISO 9000, gainsharing, and pay for skills.

Training is provided by Harford Community College staff, outside consultants and experts, or representatives from organizations with successful quality systems. The Network's director and technical advisor set meeting agendas and find appropriate presenters. The technical advisor also provides organizations with up to one hour of trouble-shooting and follow-up on topics presented at Network meetings.

The Network is cost effective for small and mid-sized companies for three reasons: 1) membership dues are pooled to cover the monthly meetings and standard group training, 2) the costs of any additional group training are shared among member organizations, and 3) members have access to a growing library of materials, texts, and videos on quality business practices housed at the Harford Community College.

The Network markets its services by word of mouth from current members, and contacts with organizations in other college programs. Potential new members are invited to attend a breakfast meeting. Existing members assist the director with follow-up efforts for these organizations.

Harford Community College plans to continue the Quality Network as long as organizations desire its services. Harford sees part of its mission as continually providing new training and learning opportunities on TQM and related practices. Harford is looking into starting a Human Resources Network at the request of a Quality Network member.

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Learning Consortia - Labor-Management Relations

Labor-Management Council for Economic Renewal

Program Highlights

Date of Inception:	1990
Number Served:	50 companies, 800 labor and management representatives
Size of Companies:	Under 500 employees
Type of Companies:	Manufacturing, manufacturing service, and health care
Evaluations:	Members report improvements in labor-management relations, employee involvement, and performance
Costs:	$50 to $100 per hour

The Labor-Management Council for Economic Renewal provides its 37 member firms and 16 member union organizations with training and consulting services designed to facilitate work restructuring and labor-management relations; networking activities to foster learning across work sites; and publications to capture lessons from participating work sites.

The Council works with management staff, labor leadership, labor-management steering committees, and work teams, facilitating meetings, delivering training, developing tools, and supplying materials. Rather than providing packaged training programs, the Council first helps clients identify their needs and concerns, and then delivers the appropriate services.

The Council provides assistance on such topics as strategic planning, work restructuring, and team building. It uses membership meetings, task forces, and panel discussions to help members learn through networking and information sharing. In addition to its own programs, it co-sponsors training with the United Auto Workers (UAW) Health & Safety Department, local universities and colleges, and private providers.

The Council is 80 percent self supporting through membership dues, fees for services, and grant income. Membership dues are $500 to $1,000 per year, depending on the size of the company or union. On-site consulting is $50 per hour for members, $100 per hour for non-members. Training programs may be free, or cost as much a $95 for a half-day session. Most publications are free to members, $5 to non-members. Event charges vary.

The Council feels it charges members less than what comparable services would cost in the commercial market. It is able to keep its costs down in two ways. First, its services are subsidized. UAW Region 1A provides the Council with office space, equipment, mailing services, postage, and supplies, and the Council procures other grant income. Second, by providing services on the basis of clients' stated needs, it is able to reduce the number of contact hours with companies and unions.

The Council markets its services through direct mail, local newspapers, public speaking events, affiliations with other organizations, and member outreach to other potential members.

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Walk-In Centers

Business and Industry Services Center

Program Highlights

Date of Inception:	Center opened July, 1994
Number Served:	SBDC 600+ companies; incubators eight companies; BOSS 122 people; contract, quality, and workplace learning 900 people
Size of Companies:	Fewer than 500 employees
Type of Companies:	All
Evaluations:	SBDC achieving state indices; 88% of BOSS participants still in business; contract, quality, and workplace learning evaluated "effective"
Costs:	See text

The Rancho Santiago Community College District's Business and Industry Services Center provides an array of business assistance services at a single location. The Center includes the county's small business development center (SBDC), business incubators, business ownership services (BOSS), contract education, quality assurance training, and workplace learning.

The SBDC and the business incubators target start-up businesses. The SBDC offers one-on-one assistance and seminars, and the incubators provide technical assistance and subsidize companies' costs. BOSS provides 200 hours of intensive entrepreneurial training to individuals interested in starting their own businesses. Contract and quality assurance training are customized courses designed for companies and delivered at their sites. (The Center also offers for-credit quality assurance training on an open enrollment basis.)

Workplace learning provides customized literacy and basic skills services directly to the business community. Programs can be delivered on the companies' sites (generally larger companies), or at the Center (generally companies only wanting to train a few individuals). Both company- and Center-based workplace learning programs use a variety of instructional techniques – including computer-based training, audio-visual and audio tapes, and small group and individual instruction – to meet the diverse needs of the students.

Prior to the start of any workplace learning (or contract education) program, the Center assesses the company's skill needs, and collects documents (such as safety and procedure manuals) that can be used to customize the curriculum. The Center also assesses the skill levels of each student and develops individualized learning plans for each one. Students are able to drop in at the Center and find an instructor on site anytime between 8 a.m. and 9 p.m.

The Center is able to keep its costs down by bringing a number of related services together at one site where they can share resources and overhead costs. Costs charged to companies are kept even lower because many of the services are subsidized by federal or state grants. Both the SBDC and the BOSS are free to companies. The incubator's leasing fees are approximately 25 percent below market rates. Contract and quality assurance training and workplace learning charge $125 per hour of training.

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High Technology Centers

Program Highlights

Date of Inception:	1983
Number Served:	3,500 open-entry, open-exit students per semester
Size of Companies:	NA
Type of Companies:	NA
Evaluations:	In student evaluations of college services, the High Technology Centers always receive the highest ratings
Costs:	County residents charged $5 registration fee, $2 to $20 department fee, and $34 per credit hour

Glendale Community College operates two High Technology Centers, equipped with a combined total of 800 computers, where students can perform lab exercises for traditional courses, or work on self-paced, open-entry, open-exit coursework. Virtually all of the college disciplines use the High Technology Center for lab exercises. However, it is the business and technology departments' open-entry, open-exit classes that, while targeted at students pursuing an associate degree in applied sciences, are most relevant for small and mid-sized companies.

Glendale offers open-entry, open-exit classes in such courses as computer literacy, word processing, spread sheets, data base management, graphics, and computer assisted design. The primary source of instruction for the courses are text books, usually written specifically for the courses by members of the college faculty, which teach students how to navigate particular software packages.

The High Technology Centers support students' self-paced learning. The Centers are open 103 hours per week, frequently outside of traditional working hours. At least one, and up to six faculty members are in the Centers, available to assist students, at all times. The Centers also employ nine full-time instructional technicians who can assist students. Finally, the Centers employ between 80 and 135 instructional associates, or student lab assistants, who staff the Centers at an average ratio of one for every seven to 12 work stations.

The Centers work hard to ensure the quality of the services they provide. Instructional associates must have good interpersonal skills in order to be hired, and once hired, are trained in customer service. Instruction on the courses and software packages are provided on a continuing basis. Glendale's business and technology departments use Industrial Advisory Committees to ensure that their programs are preparing students for workplace requirements. The High Technology Centers survey students about how to improve courses and services.

The Centers do not market their programs directly to companies, though the college's Institute for Business and Technology does. The Centers' director believes that the costs for providing training through these open-entry, open-exit classes is considerably less than the costs for hiring a separate instructor in a separate classroom.

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Institute for Computer Training

Program Highlights

Date of Inception:	1986
Number Served:	Approximately 100 companies and over 10,000 individuals
Size of Companies:	Medium to large
Type of Companies:	Office personnel from banks, electronics firms, government agencies, and apprenticeship programs
Evaluations:	Clients report improved productivity
Costs:	$35 per credit plus books

The Institute for Computer Training at Gate Way Community College offers training on word processing and graphics computer software through either a learning lab or traditional classroom instruction.

The learning lab features 100 computer stations available to students on a drop-in basis, 67 hours per week. Students can enroll at any time, and are given 16 weeks to complete a course. Instructors and student assistants are always available during lab hours to provide help for students needing it. There is no customization of training for these programs. Students work through a set book of instructions at their own pace.

An additional 100 computer stations are available in six classrooms for more structured training, offered at fixed dates and times. These programs can be customized for companies. First, the Institute will set the dates and times of the classes in response to company needs. Second, it will cut back on some sections of instruction, or expand others, in response to company requests.

The Institute serves thirty to forty companies each semester. Of the approximately 2,000 students per semester the Institute enrolls in its computer software training programs, about 450 are from company clients. Companies employ the Institute's classroom training much more frequently than its lab instruction: about 400 of the 1,000 students in classroom training are from company clients, while only about 50 of the 500 lab students are from company clients.

Because the Institute is part of Gate Way Community College, two-thirds of the program costs are born by the state. Costs are kept low by setting class sizes at 12 or more individuals. Companies only have to pay the college's tuition costs – $1 registration fee and $34 per credit – and purchase books.

The Institute serves mostly mid-sized and large companies, which probably explains why most of the Institute's company customers prefer the classroom training option. The open-entry, drop-in, self-paced lab might be a more convenient option for small companies, which frequently only have one, or a few employees that need instruction.

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Regional Manufacturing Technology Center

Program Highlights

Date of Inception:	1981
Number Served:	140 companies and 5,000 students since the Center was opened
Size of Companies:	50 to 1,500 employees
Type of Companies:	Manufacturing, and companies with internal maintenance functions
Evaluations:	Reviews from the Center's Advisory Committee and participating companies are positive
Costs:	Individual skill prices range from $8 (slide calipers) to $60 (wiring electrical circuits); an apprenticeship program costs up to $4,000 over four years

Kellogg Community College provides individualized, self-paced, instructor-directed training in the industrial trades at its state-of-the art Regional Manufacturing Technology Center. Students can visit the Center anytime it is open (8 a.m. to 10 p.m. Monday through Thursday) to work on the instructional modules they need. The Center's industrial trades faculty are always on-hand to provide students with one-on-one instruction as they work.

Kellogg has successfully broken down its traditional industrial trades training classes into approximately 800 constituent skills. Because the curriculum is broken down into individual skills, each requiring from two to five hours to master, companies and students can tailor their coursework to very specific workplace needs. The Center's director helps companies create customized training programs from the available skills. College credit is earned for all classes and may be applied toward a certificate or associate degree.

Individualized instruction is provided to all students by experienced journeymen. The use of journeymen, as opposed to traditional instructors, is credited as a key to the Center's success. Support staff handle all the necessary paperwork, freeing journeymen to spend an average of 30 hours per week with students, as opposed to an average of only 15 hours per week by instructors in traditional training programs.

A single credit at Kellogg's Center costs approximately twice as much as a credit at a traditional institution. However, companies are able to carefully target their training dollars on the specific skills they need. And, since Kellogg only charges companies for skills that are mastered, not for seat time, training dollars are not wasted on ineffective programs.

The Center moved to an industrial park in 1990, and relocation has resulted in a significant increase in both exposure for and enrollment at the Center. Battle Creek Unlimited, the local economic development agency, recognizing the positive influence the Center has in attracting and retaining businesses, actively markets the Center's services as part of its own efforts to improve the region's economic base.

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Distance Learning

Front Range Community College

Program Highlights

Date of Inception:	January, 1995
Number Served:	Ten companies, 80 individuals
Size of Companies:	Currently over 500 or under 20 employees, but plans are to focus on companies with 200 to 500 employees
Type of Companies:	Mostly manufacturing
Evaluations:	Evaluations at the end of each course and informal feedback have been positive
Costs:	Course costs include instructor time and materials for the class; connection costs are additional

Front Range Community College (which covers the area of Colorado between Denver and Wyoming) offers on-line, customized distance learning programs over the Internet. Classes cover either writing or computer skills.

Front Range's on-line course work consists of four components: 1) information provision (from a text or video), 2) interaction (on-line discussions with the instructor about the text or video), 3) hands-on exercises (homework creating a computer program or using a piece of machinery), and 4) testing (on-line). When a company signs up for an on-line class, an instructor visits the company to determine its training and education requirements, and provides the necessary texts and videos for the course. Courses last from four to 15 weeks, depending on the subject matter.

Front Range's distance learning programs keep costs down by reducing the time instructors spend traveling and conducting site visits, and by using teaching assistants to answer many of the students' questions. Distance learning instructors spend only ¼ of the time on a company's site as is spent by instructors providing traditional training.

Front Range has learned a number of lessons about on-line classes: 1) there must be a balance between allowing companies to set the training pace and establishing deadlines; 2) traditional classroom instructors may not be effective on-line; 3) actual time required from an instructor is more than in traditional classes; and 4) students and instructors require an orientation to using, communicating, and learning in an on-line environment.

A significant road block to conducting Internet-based distance learning programs is that the required infrastructure may be weakest where the technique might be most valuable: old or insufficient phone lines and limited availability of on-line access numbers are most prevalent in rural areas.

The college's existing sales force markets its on-line services by visiting companies, and making presentations to chambers, trade associations, and economic development agencies.

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Lifelong Learning Center

Program Highlights

Date of Inception: NA
Number Served: NA
Size of Companies: NA
Type of Companies: NA
Evaluations: NA
Costs: $2.5 million to cover the capital costs of the educational wing (and atrium); office space will be covered by the tenants; operating costs will be covered by rent and service fees

A cooperative partnership of educational and economic development institutions, resource agencies, and technology communications organizations in northeast and north central Nebraska are developing plans and raising money for the creation of a Lifelong Learning Center. This center will provide a variety of educational services to the citizens and businesses in the area, including credit and non-credit courses; workshops, seminars, and conferences; adult and continuing education classes; and customized and management training.

The Center will be a 40,433 square foot facility, including office space and an educational wing, located at Northeast Community College. The education wing would feature movable walls and state-of-the-art technology, including two-way interactive video and audio classrooms and computer labs. The Center will provide day, evening, and weekend classes via instructors or telecommunications, as well as business to business conferencing services.

In planning the Center, Wayne State College, Northeast Community College, and the University of Nebraska conducted a needs assessment to determine the educational services required by the citizens, community, and businesses in the area. They determined that the biggest impediments to education were distance and travel time to attend classes, work and school schedule incompatibility, employee resistance, and cost. What the area needed was affordable and accessible learning opportunities.

The Center will connect northeast and north central Nebraska to educational resources throughout the state, nation, and world. The Center's telecommunication delivery methods will allow it to serve small numbers of learners in remote locations simultaneously, thereby engaging the critical mass necessary to keep costs low.

To bring the Center from vision to reality, the partners have created a non-profit, 501(c)(3) tax exempt organization to raise contributions to cover the capital costs of the Center's educational wing and atrium (entryway). Funds for the Center's office space will be raised by revenue bonds and paid back from lease payments. Operating and maintenance costs will be covered by the tenants, user fees, and support from Northeast Community College.

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Modern Manufacturing Video Conference Series

Program Highlights

Date of Inception:	September, 1994
Number Served:	1,000 individuals per broadcast
Size of Companies:	Under 500 employees; average 200 employees
Type of Companies:	Manufacturing
Evaluations:	Evaluations from site coordinator and attendees after each broadcast have been positive
Costs:	$200 to $600 per broadcast for a broadcast sponsor; around $30 to $50 per person to attend a broadcast

The National Technological University operates a distance learning project called Modern Manufacturing: The National Video Conference Series for Successful Small Firms. This series consists of monthly (sometimes semi-monthly) live satellite seminars designed specifically for small and mid-sized manufacturers on such topics as quality, continuous improvement, production and shop floor management, new technologies, and world class manufacturing. Occasionally, the university broadcasts training seminars for manufacturing field agents.

Sessions last from 2 ½ to 3 hours and feature a professional moderator, one or two subject matter specialists, and two or three manufacturers experienced with the process or equipment being highlighted. The university visits the manufacturers' sites before the broadcasts are aired to tape the processes or equipment in use. These case studies are then featured during the broadcasts. Each broadcast includes two question-and-answer sessions when attendees can phone or fax in their questions.

The programs are broadcast from 9:00 a.m. to noon eastern time; and the university offers sites in the Pacific time zone a "tape delay" option, during which time it makes one of the expert panelists available for phone-in questions.

The series is primarily marketed to federal and state manufacturing extension programs and centers, which may partner with other organizations (such as community colleges) to establish down-link sites. Many of these sponsors provide "wrap around" sessions, bringing local experts to the down-link sites to give attendees information on locally available resources and more opportunity for questions and answers. Some sites build on the satellite seminars with local workshops one week before and/or after the broadcasts. All down-link sites own the rights to the video tapes from the broadcasts, and can replay them at any time.

The university currently has about 100 down-link sites, and is interested in expanding its services to other providers in geographic areas without manufacturing extension programs or centers. It has just completed a promotional video which describes the series and provides information on how sponsors can use and market it.

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North Iowa Area Community College

Program Highlights

Date of Inception:	1994
Number Served:	Approximately 100 companies
Size of Companies:	Six to 1,400 employees, average 203 employees
Type of Companies:	Manufacturing
Evaluations:	Participant evaluations have given the training programs high ratings
Costs:	Supported by local, state, and federal tax dollars

The Continuing Education Division at North Iowa Area Community College, with a grant from the Fund for the Improvement of Postsecondary Education (FIPSE), is using a variety of distance learning technologies to offer local companies specialized training programs not available in the area. To meet customer needs, the college surveys local businesses and pro-actively prepares itself for training requirements. It also re-actively arranges specific training events in response to company requests.

The college arranged for a two-day training program on warehouse improvement to be delivered simultaneously to four different sites. The training program, developed by the Warehouse Advisory Council, cost about $7,000 – more than the Mason City, IA, site (which wanted the training) could handle on its own. The college worked with this local company to hook it up with its three sister companies in Chicago, Minneapolis, and San Antonio, and have the Warehouse Advisory Council deliver the program through the companies' PictureTel system. The college handled brochures, books, and logistics, and 44 individuals in four different states received the training they needed.

The college also brought training in "flexography" to a regional newspaper that had recently purchased a $2 million dollar press and needed to prepare its workers to operate it. The college used the Iowa Communications Network (ICN) to deliver training from the Graphic Arts Technology Center in Clinton, IA, to the North Iowa Area Community College in Mason City, IA, thus saving the 30 individuals in the program ten hours of round-trip driving for each day of the training. Because the ICN, which uses high-speed telephone lines, was specifically established for educational purposes, it only charged $5 per hour for use.

To prepare for future requests, the college has started to build its library of more generic training options. It has taped several satellite downlink sessions – on such topics as the metric system, safety, work restructuring, and benchmarking – for companies to use. It is also establishing a collection of computer-based training and multimedia-based training in required certification areas so that companies can train small numbers of employees more cost effectively.

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Quality Learning Series

Program Highlights

Date of Inception:	First seminar in September, 1992
Number Served:	Over 80,000 individuals
Size of Companies:	60% under 500 employees
Type of Companies:	Service, manufacturing, government/military, not-for-profit, education
Evaluations:	88% of participants rated presenters, panelists, topics, handout materials, and the moderator good or excellent
Costs:	$515 to $795 per seminar for a downlink site (or less for multiple sites); average around $20 per person per seminar to attend

The U.S. Chamber of Commerce uses satellite broadcasting to deliver its Quality Learning Series, a spring and fall series of live seminars on business management, leadership, and improvement methodologies. The Chamber makes its programs available to downlink sites (which may be local chambers of commerce, individual businesses, educational institutions, military/government sites, or others), which in turn make the sessions available to individuals.

The fall, 1995, series had eight new seminars on such topics as leadership strategies (and leadership strategies for women), teams, continuous improvement, and workplace violence. Seminar presenters were well-known experts in their fields, including Joel Barker, Brian Joiner, and Peter Scholtes. All of the seminars included handouts and offered viewers the opportunity to ask questions of the presenters, either by faxing or phoning in their questions. Participants could also earn continuing education units.

The Chamber helps subscribing downlink sites plan and deliver the seminars, providing information on room arrangement, pricing, and promotion. It also provides downlink sites with sample schedules, checklists, and promotional material. Some downlink sites just host the seminars, while others build larger training events around them, including other speakers, facilitated discussions, meals, and other activities.

The Chamber averages about 150 downlink sites per seminar, and 40 attendees per downlink site. It charges organizations between $515 and $795 per seminar to serve as downlink sites, with discounts available for multiple sites. The prices the sites charge attendees varies, but average around $20 per person per seminar.

The Chamber's Quality Learning Series has a couple of major benefits: 1) it offers individuals the chance to learn from some of the biggest names in training today at an affordable price, and 2) it enables those living and working in remote areas the opportunity to participate in quality training.

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Computer-Based Training

California Community College Workplace Education Program

Program Highlights

Date of Inception:	Grant awarded July, 1994
Number Served:	Two companies, one community-based organization
Size of Companies:	Two less than 50 employees; one greater than 500 employees
Type of Companies:	Two manufacturing, one community-based organization
Evaluations:	None to date, plans include a cost benefit analysis
Costs:	$5,000 to $10,000 to develop a 30 minute module

The California community college system has developed a plan to help its Workplace Learning Resource Centers provide customized computer-based training (CBT) to companies, while reducing duplication of effort. Community college workplace education providers in the state would use a common authoring system to develop customized CBT programs for their business clients. The modules developed would then be disseminated from a statewide CBT library for other community colleges to use or adapt.

The project is currently using Princeton Center's authoring tool ExpressTrain™ and template-based computer learning package with built-in instructional design components. The benefit of ExpressTrain, and other template-based authoring programs, is that they drastically reduce the amount of time needed to develop CBT. With ExpressTrain, a 30 minute lesson that might have taken 400 hours to develop in the past, only requires about 40 hours using templates.

Template-based CBT development packages are also user-friendly, which means in-house content experts and instructional design specialists can develop effective training without the help of computer programmers. This saves money, ensures that content issues drive design, and permits quick and easy updating of content as workplace environments change.

The California community colleges are training individuals from six community colleges to be trainers, and to train interested faculty throughout the state. In the first year of the program, 126 faculty were trained, and plans are to train 144 more in FY 95/96. San Diego, the lead college for the project, has already developed CBT modules on safety topics and the use of inventory control software for two companies. Other modules on basic computer skills are being created for use with literacy students.

As the California system's library of computer-based training programs is built up, program development costs should decline. Because the CBT developers will be able to draw on existing programs customized for different industries, occupations, and companies, the amount of new development they will have to do for each new business they serve will be reduced.

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Library Learning Link

Program Highlights

Date of Inception:	Library Learning Link in 1994
Number Served:	Seven factories currently, with up to 25 site licenses for businesses permitted in Mississippi
Size of Companies:	All sizes
Type of Companies:	Open to all companies
Evaluations:	None to date
Costs:	A one-year site license rental for businesses costs $500; hardware upgrades may cost $250-$500

The DeSoto County Literacy Council's Library Learning Link is a computer-based wide area network that provides basic skills instruction in eight counties in northern Mississippi. The Library Learning Link is currently available in all the library branches in these eight counties, 17 Head Start centers, seven businesses, and community college classrooms. Library Learning Link will eventually be available at 150 sites, including 25 business facilities.

The Library Learning Link uses Solutions™ courseware, developed by Educational Activities, Inc. Solutions courseware includes lessons in grammar, spelling, reading comprehension, pronunciation, and basic math from grades K through 12 (all K-12 lessons require 40 to 45 megabytes). Additional courseware is available for English as a Second Language (22 megabytes). Courseware is loaded directly onto each of the computers at the remote sites, and each site is able to limit the lessons kept in its computers to those required by its users.

Students' personal records are kept on a central server. Students log onto the central server via modem at the beginning and end of their lessons to access and update their personal records. The Library Learning Link has three advantages: 1) it dramatically expands the public's access to basic skills instruction, 2) it enables students to work on lessons at any of a number of locations, and 3) it protects students' privacy by keeping all records on the central server and not at a public location like the library or a workplace.

Assessments of individual employees are available from the community college and the literacy council. Each business that uses Library Learning Link is assigned a tutor by the literacy council or a teacher by the community college. This instructor meets with the employees who are using the Library Learning Link at least once each week to provide personal instruction and to help employees use the computer system. The instructor also monitors each employee's progress by using the curriculum management system within the Solutions program. The Library Learning Link is able to provide assessments, teachers, and tutors at no additional charge to the companies through use of state funds and volunteer services.

To date the Library Learning link has cost $48,000 for the software and 150 site licenses, and approximately $15,000 for hardware to run the system. A U.S. Department of Education grant of $34,000 helped start the Library Learning Link, and revenue from the business site license rentals is used to maintain and upgrade the system.

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Read & Achieve Program

Program Highlights

Date of Inception:	First pilot January 1995; available to the public June 1995
Number Served:	Six companies
Size of Companies:	Most have 80 to 150 employees
Type of Companies:	All types
Evaluations:	No general evaluations on the Read & Achieve program to date
Costs:	$150 to $200 per person for training leading to full certification of basic skills proficiency, plus hardware requirements

The Literacy Initiative's Read & Achieve program provides computer-based, job-specific, basic skills training for company employees in Columbus, OH. An advisory committee of business representatives helped shape the Read & Achieve program, ensuring that the program met the business community's needs. Read & Achieve uses the Job Skills Education Program (JSEP) software as its instructional tool.

Read & Achieve uses a four-step process: 1) individual evaluations of all interested employees, using the Educational Testing Services' Workplace Literacy Test (WLT); 2) analysis of the basic skills required for a specific job or department; 3) customization of JSEP lessons to those skills identified by the job analysis and specifically needed by the employee; and 4) basic skills training using JSEP and subsequent reevaluation with the WLT.

Based upon information from the 1992 National Adult Literacy Survey, The Literacy Initiative (TLI) determined that a score of 300 (mid-level 3 on the WLT) represents the level of basic skills needed to effectively perform in the workplace. Employees who score 300 or above (on the WLT's scale of 0 to 500) receive a basic skills certificate. Individuals who score under 300 receive JSEP training, are then retested, and are certified if they subsequently score above 300 on the WLT. Companies participating in the Read & Achieve program receive accreditation indicating their commitment to the enhancement of their employees and the overall workforce.

The Literacy Initiative is in the process of patenting the Read & Achieve process and plans to eventually make the program self-sustaining. It trains a facilitator within each company to manage the program, assist students in using the software, and conduct job analyses. TLI, or another approved direct-service provider, administers all tests and evaluations to ensure confidentiality.

Substantial public and private support, which has underwritten the development of Read & Achieve, has reduced the program's cost to participating companies by 1/3 to 1/2 compared to similar programs provided by private companies. The Literacy Initiative markets Read & Achieve through mass mailings, media coverage, and its Advisory Committee of community leaders, and by networking with professional business organizations, unions, and the Governor's Human Resource Investment Council.

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Vermont Institute for Self Reliance

Program Highlights

Date of Inception:	1990
Number Served:	Three companies
Size of Companies:	Less than 200 employees
Type of Companies:	All types
Evaluations:	None to date
Costs:	$28 per hour to the company

The Vermont Institute for Self Reliance has established a central learning center, including a computer lab, in Brattleboro to provide workforce literacy services to three companies. The lab has only four computers, but this is sufficient for these small companies. The lab is open Monday through Thursday, from 12 to 5 p.m., during which time small groups attend classes facilitated by a literacy instructor. The businesses schedule time in the lab for their employees, and provide them with release time so that they can take advantage of the training.

The Institute invests a considerable amount of time into customizing its services and providing individualized support. It uses a committee of front line workers (and possibly supervisors) to talk with other employees and discover the topics they would want included in a workplace education program. It then uses the information gathered by the committee to construct a survey which will quantify employees' interests.

Finally, the Institute conducts a series of random and confidential interviews with line employees to develop qualitative information on employees' feelings and perspectives about a workplace education program, and to determine employees' willingness to participate in such a program. The Institute has found that seeking information from employees has a valuable side benefit: it makes the employees more interested in the program, and gives them a feeling of ownership and a sense that they have a stake in the program.

The Institute continues to involve company personnel throughout a program's operation. A committee of workers, supervisors, and human resource and other managers is formed to help the Institute oversee the training program and plan and evaluate services.

The Institute's program is supported by a U.S. Department of Education workplace literacy grant. The Institute estimates that its services cost $56 per hour. Half of this cost is covered by the grant, and half by the companies. Depending on the number of classes conducted, companies typically pay from $56 to $175 per week.

The Institute purposely focuses its curriculum on broadly applicable work-related basic skills in order to save on development time and cost. It emphasizes learning how to learn and problem solving, not company specific skills.

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Trained Volunteers

Springfield Adult Basic Education

Program Highlights

Date of Inception:	1986
Number Served:	Eight companies
Size of Companies:	300 to 600 employees
Type of Companies:	Manufacturing, food service, health, agribusiness, sheltered workshop
Evaluations:	Pre- and post-assessments showed gains in skills
Costs:	$1,645 for an instructor, $2,500 for books, and $300 for testing materials for 15 students and an average of 130 hours of instruction

The Adult Basic Education (ABE) program in Springfield, MO, uses a combination of paid, professional ABE instructors and trained volunteers to provide its literacy services. While most of the program's services are not workplace based, it has provided workplace literacy services to eight companies over the last nine years.

The workplace literacy programs last from two months to two years, depending on a company's interest. Classes are usually conducted twice a week for 2 to 2 ½ hours per session. Ideally, classes have 15 students, though most of the workplace programs have only eight to ten students. Springfield's ABE instructors try to customize services to the employees by encouraging them to bring in manuals, reports, graphs, or charts from the workplace.

Volunteers are used to supplement the paid instructors. Students reading at below a sixth grade level or for whom English is a second language frequently need one-on-one assistance. The Springfield ABE program prepares its volunteer tutors with 12 hours of Laubach tutor training before beginning work, and with in-service programs scheduled for the ABE instructors.

The Springfield program uses any free media – from church bulletins to public service announcements on local radio stations – to recruit volunteers. Once the volunteers are on board, the program holds support meetings and recognition events, and provides small tokens of appreciation and frequent words of thanks in an effort to retain the volunteers' assistance.

The Springfield ABE program uses state and federal dollars to cover the costs of its services. The Ozarks Technical Community College provides it with space and includes it in its program listings, but does not provide other financial support. The program's services are available to companies at no cost, but companies are asked to provide a locked cupboard for materials and a conference room for classes, and are sometimes asked to help cover costs when state reimbursements are not enough. In addition, some companies purchase materials for class use.

When the Springfield program first began marketing its services to companies, it had to go door to door. Now that it is associated with the community college, it sometimes gets referrals from the college's customized training and job development program.

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McHenry County College Adult Education and Literacy

Program Highlights

Date of Inception:	1990
Number Served:	12 companies
Size of Companies:	30 to 500 employees
Type of Companies:	Manufacturing, heavy industry, steel, machine parts, auto parts, printing, hotels
Evaluations:	Company managers, human resource directors, and line supervisors note improvement in employees' attitudes and performance
Costs:	$70 per instructional hour

The McHenry County College Adult Education and Literacy program uses trained volunteers to augment its paid workforce literacy instructors. The college's workforce literacy programs include both English language and math skills, and typically involve 90 to 120 instructional hours, delivered in 1 ½ to 2 hour sessions, twice a week. Professional instructors teach the classes of 12 to 18 students, while the volunteers provide one-on-one tutoring to students who have missed particular classes or are having trouble grasping specific concepts.

The college does not assess companies' job skill needs or customize instruction, but it does invite the companies to share materials – such as safety and instructional training manuals – so that the instructors can integrate company vocabulary and needs into the general instruction. The college does assess individual students' literacy skills, both before and after training, to ensure that students are getting the instructional help they need.

The college recruits and trains approximately 90 volunteers each year. Volunteers receive 16 hours of training in either general literacy or English as a Second Language. After this training, volunteers that express an interest in working in companies are provided an additional orientation – which includes an on-the-job experience scheduled between classroom instruction – to prepare them. Volunteers are monitored in their work by a workforce literacy coordinator and the paid instructor with whom they work.

The college recruits most of its volunteers through advertisements in its adult education schedule, which is mailed to every business and home in the county five times per year. The college conducts four or five training programs per year, with 15 to 20 students in each session. Volunteers actually have to pay the college $20 to participate in the program. The money is used to cover the volunteers' instructional materials and the recognition programs the college holds for the volunteers.

In the past, the college only worked with about four companies per year. Last year it hired someone to work full time recruiting companies, and as a result, it expects to be working with ten companies in the coming year. The college feels that it provides a good, solid workforce literacy program, of consistent quality. It hopes to be able to purchase a mobile computer learning lab, which it feels would improve the quality of its offerings.

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Appendices

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Additional Resources

This list contains programs and organizations mentioned in the publication, but not highlighted in a case study or one-page summary.

EPiC ISO 9000 Training Program, Richard Tvedten, 550 Cedar Street, 100 Capitol Square Building, St. Paul, MN 55101, phone 612/296-0668, fax 612/296-0872, e-mail rtvedten@tc-top.techcol.state.mn.us.

Going the Distance, Dr. Keith Togstad, Dean of Instructional Services, Northeast Community College, 801 East Benjamin Avenue, Norfolk, NE 68702-0469, phone 402/644-0457, fax 402/644-0650, e-mail keith@alpha.necc.cc.ne.us.

Illinois Industrial Training Program, Lori J. Clark, Illinois Department of Commerce and Community Affairs, James R. Thompson Center, 100 West Randolph Street, Suite 3-400, Chicago, IL 60601, phone 312/814-2809, fax 312/814-2370.

The Integrator, The Conover Company, Ltd., P.O. Box 155, Omro, WI 54963-0155, phone 800/933-1933, fax 800/933-1943, e-mail 102354.1136@compuserve.com.

Laubach Literacy Action, 1320 Jamesville Avenue, P.O. Box 131, Syracuse, NY 13210, phone 315/422-9121, fax 315/422-6369.

LexIcon, Beaver Meadow Road, Sharon VT 05065, phone or fax 802/763-7599, e-mail lexicon@aol.com.

Literacy Volunteers of America, Inc., 5795 Widewaters Parkway, Syracuse, NY 13214, phone 315/445-8000, fax 315/445-8006, e-mail lva_nat@aol.com.

Mind Extension University, 9697 East Mineral Avenue, Post Office Box 6612, Englewood, CO 80155-6612, phone 800/777-MIND, fax 303/799-0966, world wide web http://www.meu.edu.

The Telecourse People, South Carolina ETV, Marketing Department, P.O. Box 11000, Columbia, SC 29211, phone 803/737-3441, fax 803/737-3503.

Texas A&M University Distance Learning, Nicki Harris, College Station, TX 77843-3126, phone 409/862-1789, fax 409/845-3212, e-mail dcfranci@teexnet.tamu.edu.

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National Workforce Assistance Collaborative Products and Serivces

The **National Workforce Assistance Collaborative** offers an array of products and services providing information and assistance in four areas: employee training, labor-management relations, work restructuring, and workplace literacy.

Resource Listings

- *Resource Guide: A Key to Organizations Working in Employee Training, Labor-Management Relations, Work Restructuring, and Workplace Literacy* - A listing of national membership organizations and state program offices supporting workplace and workforce changes.
- *Workplace Literacy Publications: An Annotated Bibliography of Print Resources* - A workplace literacy bibliography.

Newsletters

- *Workforce Briefs* - A series of newsletters for businesses. Initial newsletters focus on: changes companies can make to increase their competitiveness, the value of training, ways to involve employees in company change processes, the need for and value of workplace literacy programs, new pay policies, the roles of employers and employees in career development, and starting a human resource department.
- *Business Assistance Notes* - A newsletter series for service providers. Initial newsletters focus on: the needs of small and mid-sized companies, integrated service delivery, cost effective services, implementing learning consortia, marketing to businesses, organizational training needs assessment, training evaluation, and state-level integration policies.

Tools for Companies

- *Product Checklists* - Two checklists – for employee training and workplace literacy products – companies can use to determine whether particular assistance products follow best practice.
- *Interview Guides* - Four guides – for employee training, labor-management relations, work restructuring, and workplace literacy products – companies can use to interview and select appropriate service providers.
- *Selecting and Implementing Computer-Based Training* - Checklists and text that will enable individuals to determine the most appropriate 1) training media, 2) type of computer-based training, and 3) computer-based training product, provider, or site.

Tools for Service Providers

- *Integrated Service Delivery* - A publication, based on case studies of "best practice" sites, that provides insights into the best methods for delivering integrated services – services in the areas of employee training, labor-management relations, work restructuring, and workplace literacy – to small and mid-sized companies.
- *Delivering Cost Effective Services to Small and Mid-Sized Companies* - A how-to guide that highlights proven approaches for delivering cost-effective services to small and mid-sized companies.
- *Approaches to Forming a Learning Consortium: A Guide for Service Providers* - A how-to guide on forming learning consortia.
- *Marketing to Businesses* - Information on how to identify and effectively market services to a local business community.
- *Assessing an Organization's Training Needs* - A generic training needs assessment accompanied by instructions on how to approach and "market" the value of training to small and mid-sized business leaders.
- *Assessing the Value of Workforce Training* - An introduction to assessing the value of training programs, focusing on quick and easy strategies.

Internet Services

- *Internet Listserv* - An electronic forum for discussing issues and sharing information on workforce and workplace development issues. To subscribe to NWAC-L, send an e-mail message to LISTSERV@PSUVM.PSU.EDU. Leave the subject line blank. The body of the message must contain only the following: subscribe NWAC-L YourFirstName YourLastName.
- *Gopher Server* - Online access to materials and products produced by the Collaborative as well as additional instructional and staff training materials, research, databases, bibliographies, program guides, reports, and articles concerning small and mid-sized businesses and the challenges they face. The Gopher Server address is INFO.PSU.EDU. After you reach the Gopher Server, open "Information Servers at Penn State," then open "Research Centers and Institutes" to find the National Workforce Assistance Collaborative Gopher site.
- *World Wide Web Home Page* - Information on the Collaborative and its products and services, as well as links to related information on the Internet. The Collaborative's world wide web address is http://www.psu.edu/institutes/nwac.

For more information on the Collaborative and its products and services, contact the National Alliance of Business, 1201 New York Avenue NW, Suite 700, Washington, DC 20005, phone 800/787-2848, fax 800/787-2848, e-mail NWAC@NAB.COM.

Products can be downloaded from the Collaborative's gopher server or world wide web home page, or ordered directly from the National Alliance of Business, Distribution, P.O. Box 501, Annapolis Junction, MD 20702, phone 800/787-7788, fax 301/206-9789, e-mail INFO@NAB.COM.

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